January 2002
Volume 70 No 1

Amateur Radio

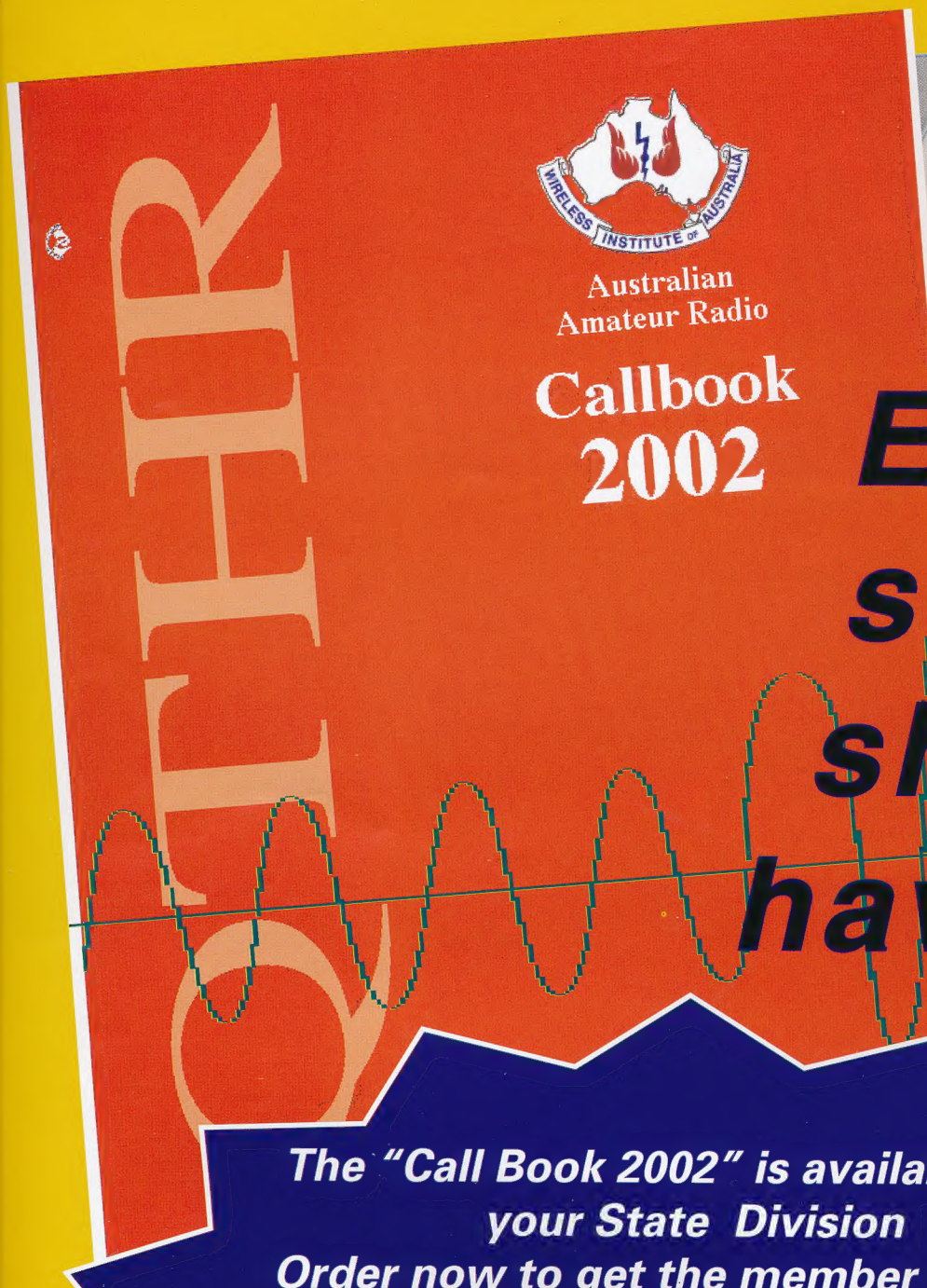
WIRELESS INSTITUTE OF AUSTRALIA

2001 Index

A home brew dish and the weather

'The rig this way is a Collins KWM-2... or if you catch me on 40 or 80 metres, I'll be running the Collins S-lines'
Ian McLean, VK3JQ
'Shares the Passion'

- 1st VK phone contact with ISS
- VHF SWR and Watt Meters
- Measuring Q. with the Simple Q Meter



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Note:

December cover photograph of Brenda Edmonds presenting Bill Rice with his Life Membership Certificate was taken by Peter Gibson VK3ALS.

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Our cover this month

January cover is of Norm Rosensweig, VK5ZAH (right) and Rob Gurr VK5RG with Norm's homebrew UHF antenna. See article on page 7. Photograph taken by Max Riley VK2ARZ.

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, How to write for Amateur Radio is available from the Federal Office on receipt of a stamped self-addressed envelope.

Back Issues

Back issues are available directly from the WIA Federal Office (until stocks are exhausted), at $4.00 each (including postage within Australia) to members.

Photostat copies

When back issues are no longer available, photocopies of articles are available to members at $2.50 each (plus an additional $2 for each additional issue in which the article appears).

Disclaimer

The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

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A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

The world's first and oldest
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Founded 1910

Representing
The Australian Amateur Radio Service

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Editor's Comment

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Looking ahead

Best wishes to all our readers for the New Year. I hope we will all be able to have a satisfying year in terms of activities and outcomes.

I have a number of projects in hand but not in progress at present, an amplifier for my 1296 transverter, a power meter based on an AD8307 logarithmic chip (It has capability from nanowatt to a 100 watt.) and a SWR bridge for 144 and 430 MHz. The problem seems to be getting started. I hope you can all make some time to expand you Amateur activities this year.

This year will see further pressure on our society's volunteers. There is a continuing need to present the Amateur point of view to the ACA. There are the continuing problems with LIPDs and how we negotiate a "Win–Win" solution. Unfortunately we are secondary users of the 70 cm band and cannot demand our preferred solution. I must admit I am quite surprised how many crane controllers could be subject to malfunction due to our legitimate operations. I would have thought safety would have the ACA looking more constructively at this aspect. Anyway read Will McGhie's Repeater Link column for a more in depth discussion.

Neil Trainor VK3IJ has written to me on the whole question of exams. See 'Opinion' on page 55. I think he has raised some very good ideas. There is a need to ensure that those who operate with us know sufficient to operate safely, without causing interference to other operators and neighbours and have sufficient knowledge of the principles of the equipment we use, to look after it and operate it efficiently. When you think about it a number of us only had to learn about AM and Morse to get a licence. What we learnt to operate with SSB, FM, Packet, ATV etc. was all learnt "on the job", some of it "Monkey see, Monkey do".

The other area we need to consider seriously is who is going to do the work? You are all aware that the finances of the WIA are stretched. AR Magazine takes a large part of the WIA Federal income to produce. However without AR there is no common link for all VK Amateurs. Unfortunately some Amateurs are unable to afford the full subscription and do not receive a copy of AR. As the number of Australian Magazines which appeal to Amateurs declines, the loss of AR would be serious. Subscription to any other magazine would be much more than the present cost of AR. I would like to think AR does provide a reasonable coverage of things Amateur in Australia. However it can only be as good as the people who voluntarily write and submit articles for publication, at their own cost I should add. Without the voluntary involvement of WIA members Amateur radio in Australia would have been steamrolled by the authorities a long time ago. It is a pity that some 60% of the Australian Amateur population do not feel the WIA is worthy of their support.

Best Wishes for 2002. May all your plans become reality, may all your projects work.

73 Colwyn VK5UE

What to do in 2002

There are a number of **Ham Fests** and **Electronic shows** throughout the year. Three are advertised this month; then there is **Urunga** still to come.

There are contests to take part in, seriously or just to have a few hours to help the serious operators make a few more contacts. This also lets you check how well your station is performing.

There are **Field Days**. Take the portable/mobile gear into the back garden and set it up to work off batteries. Then pack it ALL up into a vehicle. A check list helps. This should cover tools and instruments used to set the station up. Nothing worse than driving 50km without the mic or the key or the coaxial plug adaptor needed to make it all workable.

WIA Comment

Ernie Hocking VK1LK
WIA Federal President
Email president@wia.org.au

AR Matters

Since last month's edition and my request for your views on the future options for AR I have received a huge response by letter and email. The response has clearly demonstrated the WIA and its members are a force to be recognised. I will shortly start the exercise of analysing this correspondence to quantify the views expressed. My initial analysis has identified that there are many views of what is and is not acceptable for the future. As such, no matter which approach we adopt, I know that some of you will not agree with the direction taken. In defence of any decision I would ask you to be conscious of the very real financial restrictions that we face at the moment and be assured that the choice will be one with the best interests of amateur radio at heart.

Among the suggestions are a number of new ideas that were not in my article last month. These include providing AR in an electronic form on the web on a subscription basis. I am personally in favour of this approach as a result of my own experience as a member of the IEEE. Providing journals on line has a number of advantages including the ability to search for articles across a wide time frame. If you are interested in seeing the way in which such a web based delivery of AR would work then I would urge you to visit the IEEE web at www.ieee.org, www.computer.org, or alternately have a look at the ARRL offering at www.arrl.org.

Federal Coordinators

Recently there have been a number of changes among the various Federal coordinators. On the awards scene Mal Johnson has taken over from John Kelleher. Mal has a number of exciting ideas that he will be publishing over the next few months in AR and on the web. The hand over has been quite a lengthy one and I sure that we will all bear with Mal while he tries to catch up on the back log of awards that are due.

On the WRC preparation front Keith Malcolm has agreed to take up the baton from Gilbert Hughes (although Gilbert continues his involvement as the VK1 Federal councillor). Keith will be working with David Wardlaw to ensure that amateur interests are well represented at the ACA in the preparatory efforts that lead up to WRC in 2003.

We also welcome Henry Andersson who has picked up the role of Federal Intruder Watch Coordinator.

I am sure that you will all join me in saying thank you to all past coordinators and welcome to the newcomers. Finding volunteers to undertake these Federal coordination roles is never easy and often their work goes unnoticed. There are of course endless lists of tasks that need to be handled at Federal level and we are always looking for volunteers to assist in this area. At the moment I am looking for someone to help out with the collation of the material needed to make up the reference section of the annual Callbook as well as someone to assist with publicity and marketing issues. If you feel that you have the skills or time to assist then I would be delighted to hear from you.

The New Year

Next year promises to be another interesting one. On the horizon there are a number of events and issues that I am looking forward to including:

- **The 2002 Federal Convention and AGM.** There is much that we need to discuss. One of the subjects that a number of members have written to me about is the current structure of the WIA. This is a difficult issue for a number of reasons. If you have strong views on this or any other matter now is the time to lobby your local Division.
- **The results of the Productivity Commission Review.** No matter what the results of the review I am sure that we as amateurs will need to make changes to reflect the changes to the Radio Communications Act that result from the review. I hope that whatever the outcome we can act together to make Amateur Radio a more exiting option for newcomers to the hobby.
- **Foundation Licence.** The council has already agreed that we need to investigate the matter of the foundation licence. This matter is closely linked to the matter of the Productivity Commission review and the devolution of examinations from the ACA. When the time comes to discuss the nature of such a licence, we the WIA, must be prepared to be able to put forward specific proposals for the way that the licence would be structured in terms of entry and operating privileges. If we are to be able to attract more recruits to the hobby then it is imperative that we get the structure of the foundation licence right. We need your views on this issue in order to progress this item. Even better if you have time, ideas and expertise available please get in touch.
- **Recruitment.** We need to spend time next year looking carefully at how we can recruit more amateurs. Looking forward in time to when the WIA has secured the management of examinations from the ACA and achieved a new entry level foundation licence we need to be in a position to sell amateur radio to a wide range of groups if these efforts are not be wasted. Next year I will aim to establish a recruitment group whose purpose is to work out the best way that we can raise the profile of amateur radio and help others aware of the vibrant hobby that we all know it to be.
- **Publications.** As noted earlier I would like to use next year as an opportunity to revise the current Callbook and reference material. There are a number of exciting things that we could do to make both the Callbook and the associated reference material much more attractive to members and non-members. If you feel that you have the skills to assist please make contact with me to discuss how we can improve these publications for the future.

Lets make 2002 the start of the new future of amateur radio here in Australia

Best wishes and 73s de

Ernie Hocking VK1LK
WIA Federal President

VHF SWR and Watt meters

Paul Clutter VK2SPC
52 Keats Avenue
Bateau Bay NSW 2261

Here is a VHF SWR meter built using a main line conductor and sampling strip lines enclosed in a suitable container. The design is based on an article in the RSGB VHF-UHF Manual, Third Edition 1976, edited by D S Evans G3RPE and George Jessop G6JP.

The main line conductor is best in the form of a tube, as this is more readily available and can be any diameter and length. This line is mounted between suitable sockets, SO239, by soldering flat pieces in the ends of the tubing (see Fig 1).

The characteristic impedance should be the same as the coax, the transmitter, and the antenna. The impedance is determined by the diameter of the tubing, and the space between it and the inside of the container box (see Fig 2). The SWR meter line uses a 3/4 inch OD copper tube for the centre conductor.

Next, the sampling strip lines are added to pick up RF, both forward and reverse, to give SWR. The strip lines have an impedance determined by their width, and the distance from the box upon which they are mounted, plus the terminating resistors (see Fig 2).

The impedance of the main line is given by the formula for a round centre conductor in a square outer section (see Fig 2).

$$Z_o = 138 \log_{10}(1.178xD/d)$$

When d = 0.75 inch and D = 1.5 inches,

Z_o = 51.336 ohms.

The impedance of the sampling strip lines is given by the formula:

$$Z_o = 230 \log_{10}(4xH/W)$$

When W = 0.375 inch and H = 0.156 (5/32) inch, Z_o = 50.945 ohms. *(This formula is for a strip line located over an infinite plane when the ratio H/W has a value between 0.1 and 1.0.)*

Assuming that the left hand SO239 socket is the input from the transmitter, and the right hand socket goes to the antenna, the diode end of the strip line will be on the left end and will read the forward RF power. The other strip line will have its diode on the same end as the right hand antenna socket and give the reverse RF reading (see Figs 1 and 3). The terminating resistors will be connected on the opposite ends to those which have the diodes.

The distances of the strip lines from the main line conductor are not critical, but should be equal in mechanical and electrical values to keep the ratio of forward and reverse power equal. This can be tested by taking a forward reading, with left input, then reversing the connections with the same power to the right input and noting the result. It should be the same. Remember to connect a 50 ohm impedance device (dummy load or antenna) to the outputs when making the comparison tests.

Other components in the meter are shown in the circuit diagram, Fig 3. The sensitivity is such as to provide FSD on a 50 microampere meter with a carrier power of two or more watts. The upper limit is set by the dissipation of the terminating resistors which are one watt (2 x 100 ohm in parallel = 50 ohm) and, since the forward line is dissipating power about 32 dB down on the incident transmitted power, the maximum should not exceed about 500 watts - who has that much power on two metres?

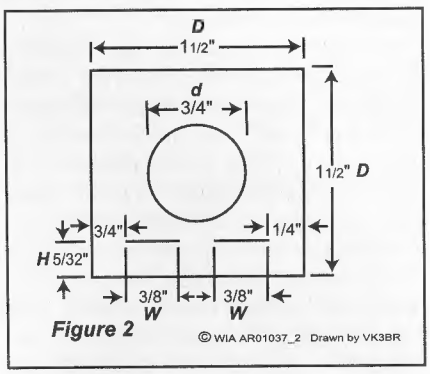


Figure 2. End view of inner conductor of SWR meter and location of strip lines, 4 1/2 inches long and parallel, and 5/32 inch above inside of box.

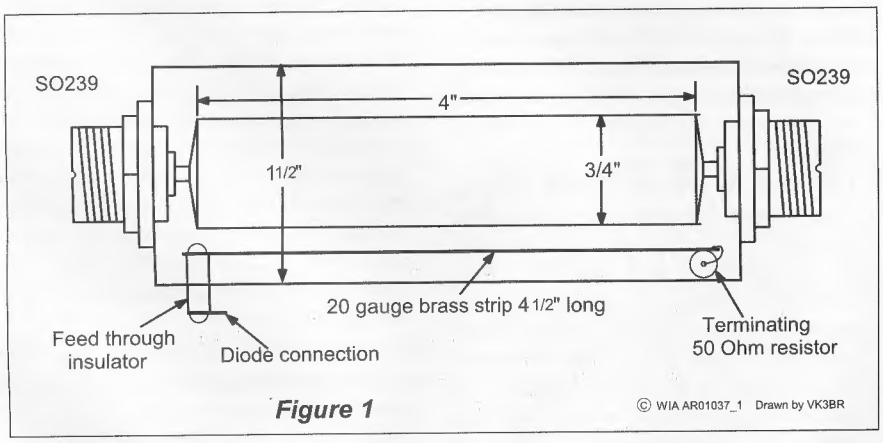


Figure 1. Main line inner conductor with side view of strip line.

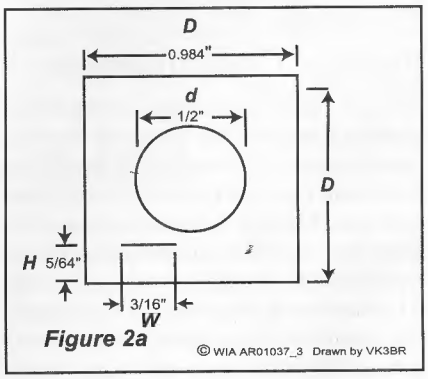


Figure 2A. End view of inner conductor of watt meter and location of strip line parallel and 5/64 inch above inside of box. Length not critical.

As for the frequency range, the sensitivity will fall linearly with decrease in frequency from the two metre band because the coupling lines are short. Increasing frequency will deteriorate the impedance matching as the coaxial 'step' changes between the connection of the SO239 socket and the main line conductor, and also as components become increasingly reactive.

When a coaxial cable, or a similar device having characteristic impedance, is interrupted by connection to a plug, socket, or other device, a discontinuity of the dimensions, which maintain the impedance, is created. This can range from a nil effect to something quite disruptive to the performance expected from the device.

Fig 6 shows the change in dimensions of two coaxial lines which have the same impedance and it is the length "a" which could have an optimum value depending on the difference in dimensions of the two conductors. This is the case where the ends of the main line conductor (3/4" tube) are fastened to the spigots of the SO239 sockets. Unfortunately, there is no simple arithmetical formula relating the step-length to these parameters but it is a function of the characteristic impedance and of the ratio, D/d, of the inner conductors (see Fig 6). My own feeling is to make the main line conductor as long as can be easily soldered in between the SO239 sockets thus keeping the length "a" as short as possible.

Wattmeter

The wattmeter uses a reduced-diameter main line conductor of 1/2 inch OD and therefore requires a reduced size box of about one inch square to house both it and the strip line. Only one stripline is needed (see Figs 2a, 4, 5, 7, and 8). The construction is similar to the SWR meter but requires only one strip line. The wattmeter circuit diagram, Fig 4, shows two switchable preset pots to change the scale from 10 watts to 100 watts FSD. It will require adjusting with another accurate wattmeter.

From the formulas and size examples, one can calculate any main line conductor size and its box dimension to get 50 ohm impedance and the suitable strip line to match. The impedance of the main line is given by the formula for

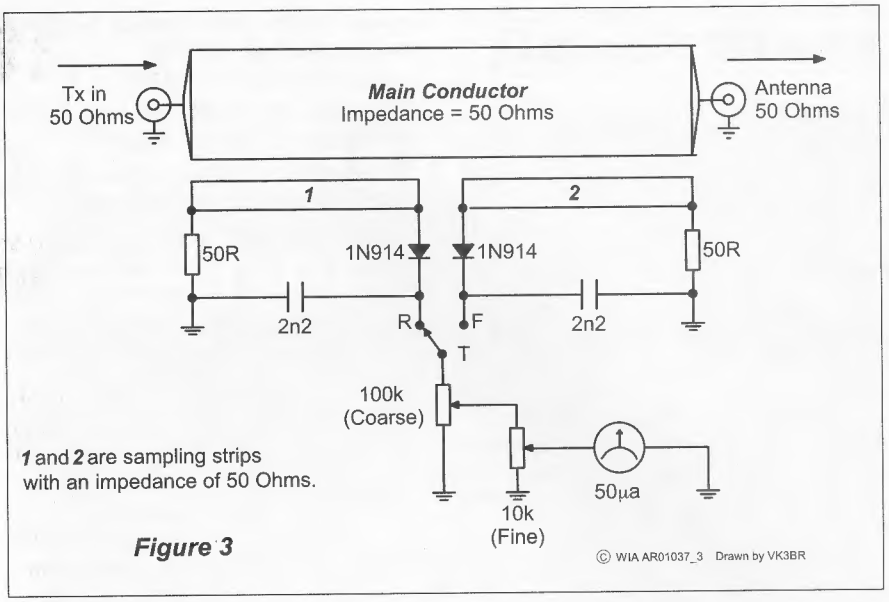


Fig 3 - VHF SWR meter circuit diagram.

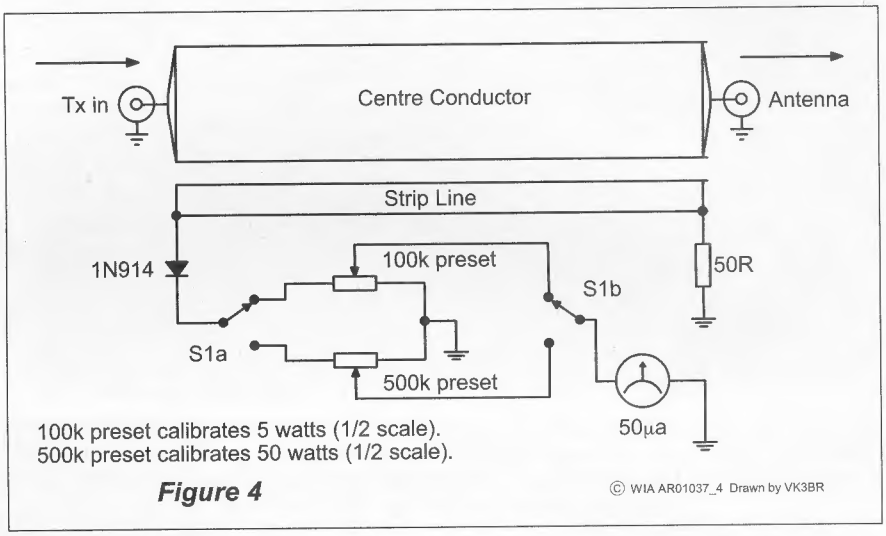


Fig 4 - Watt meter circuit diagram.

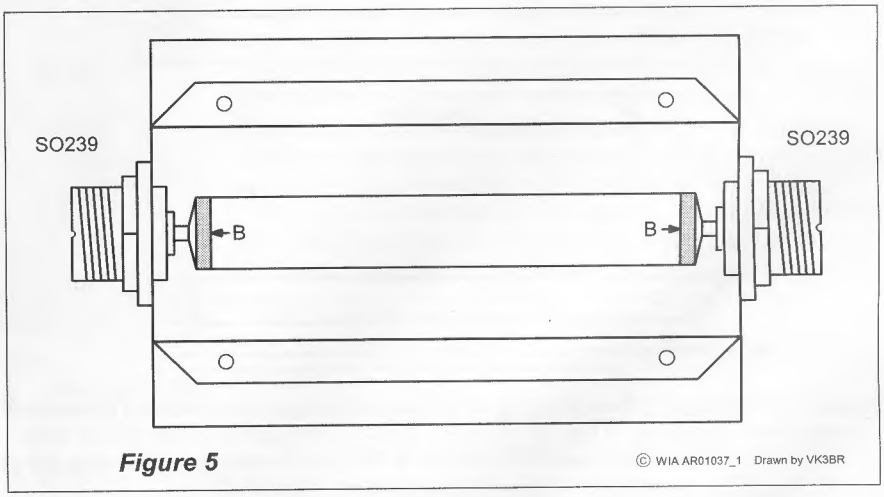


Fig 5 - View of centre conductor (1/2 inch diameter) between SO239 sockets (length not critical). End pieces (B) cut from 20 gauge brass and soldered in slots. Screw fastenings of square box over centre conductor and SO239 sockets not shown.

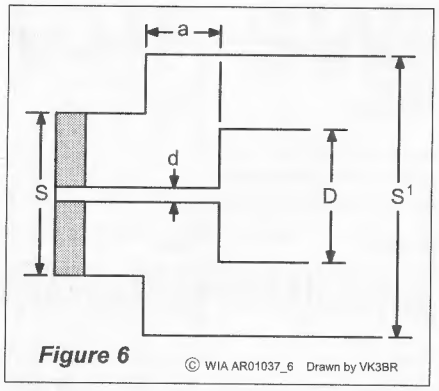


Figure 6. Step discontinuity. The characteristic impedance Z_o is given by 138 $\log_{10}$ S/d which is also 138 $\log_{10}$ S/D. The optimum step length a is a function of Z_o D/d.

a round centre conductor in a square outer section (see Fig 2A).

$Z_o = 138 \log (1.178\ D/d)$

When d = 0.5 inch and D = 0.984 inches, Z_o = 50.38 Ohms.

The impedance of the sampling strip line is given by the formula:

$Z_o = 230 \log (4\ H/W)$

When W = 0.187 inch and H = 0.078 (5/64) inches, Z_o = 51.083 Ohms. *(This formula is for a strip line located over an infinite plane when the ratio H/W has a value between 0.1 and 1.0.)*

Finally, Tables 1 and 2 are included to enable conversion of a linear reading meter into SWR figures for 0 to 50 FSD and 0 to 100 FSD meters.

ar

Table 1 - 50 meter divisions with forward set to full scale.

Reflected Meter Reading	Reflection	SWR Coefficient
0.5	0.01	1.02
1	0.02	1.041
2	0.04	1.083
3	0.06	1.128
4	0.08	1.174
5	0.1	1.222
6	0.12	1.273
7	0.14	1.326
8	0.16	1.381
9	0.18	1.439
10	0.2	1.5
15	0.3	1.857
20	0.4	2.333
25	0.5	3

Table 2 - 100 meter divisions with forward set to full scale.

Reflected Meter Reading	Reflection	SWR Coefficient
0.5	0.005	1.01
1	0.01	1.02
2	0.02	1.04
3	0.03	1.062
4	0.04	1.083
5	0.05	1.105
6	0.06	1.128
7	0.07	1.151
8	0.08	1.174
9	0.09	1.198
10	0.1	1.222
15	0.15	1.353
20	0.2	1.5
25	0.25	1.667

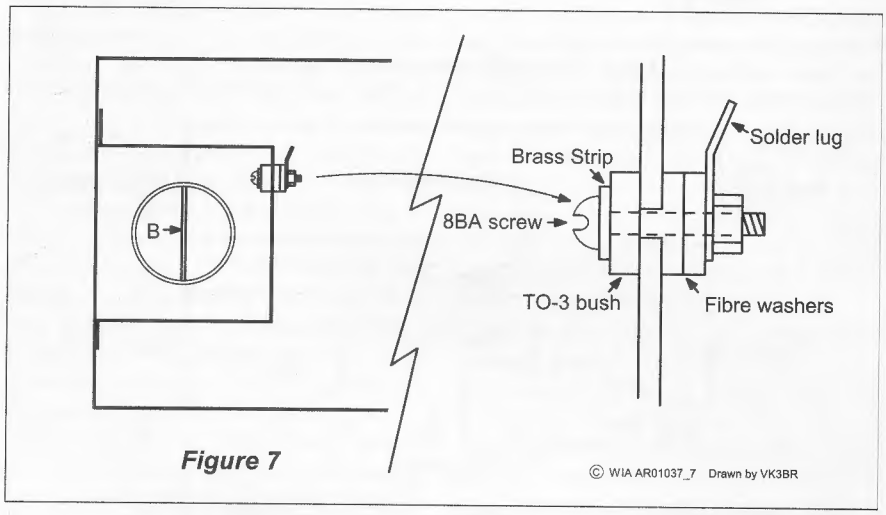


Figure 7. End view of centre conductor without SO239 and square box, including end view of strip line sampling conductor. Detail of T03 bush and fibre washers holding strip and solder lug - DOUBLE SIZE.

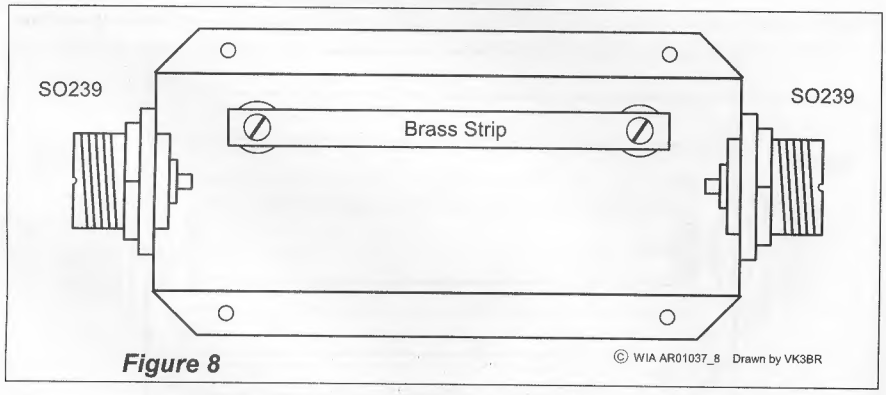


Figure 8. Inside view of box showing strip line mounting, without centre conductor, offset from centre line of box. Diode (refer Fig 4) is connected to left end of strip when Tx input is at left hand SO239 socket. The right hand end of the strip is connected to the 50 ohm terminating resistor.

Over to you

Bare bones transceiver

Hello fellow constructors...

I have had difficulty assembling the bare bones transceiver due to space limitations in the vicinity of the PA transistor. I have now determined that the capacitors C11 and C14 have been reversed on the parts layout diagrams. The output coupling capacitor is nearly twice the diameter of the other cap. If these capacitors are reversed in position on the parts layout the problem is solved.

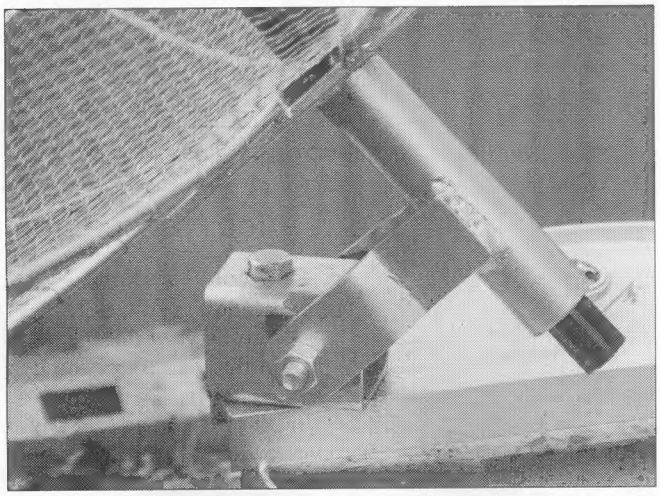
Max Riley VK2ARZ.

VK5BA solved this by leaving the legs on the PA transistor long. Ed

A home brew dish and the weather

Norm Rosenzweig VK5ZAH

Having an interest in the Weather, or rather the approaching weather, a group of us have built satellite dishes to receive 1691MHz weather fax images from the GMS5 geostationary weather satellite. The actual skeleton of the dish was designed and prefabricated for me by Peter Wegener, one of those agrimechanical geniuses. The dish is 1.5 metres in diameter and made out of 12mm round steel rod. The rods are brought together to a centre hub consisting of a steel plate 200mm square, this is attached to a piece of 40mm water pipe The dish was then covered with a taut layer of bird netting.



The dish has a very narrow beam and the satellite is a long way away (37000 km) and some form of alignment of the azimuth and elevation is a must, one advantage the satellite is geostationary (always in the same spot) but still some provision must be made to adjust the azimuth and elevation to align the dish to the satellite, to be 5deg out in either x or y you can miss the signal altogether, all this requires a solid base for the dish to be mounted on. We have used a 44 gallon drum filled with water for this purpose, the drum had contained plastic resin originally and its hoped the drum is lined with enough plastic to prevent rust, however if it rust out a new drum would be quite easy to replace.

Note the black bar going through the center on the center pipe, this is a piece of plastic pipe painted black to avoid UV breakdown, this is the plastic pipe that supports the feed horn.

What to do in 2002

***The* Federal Convention**

is not far off

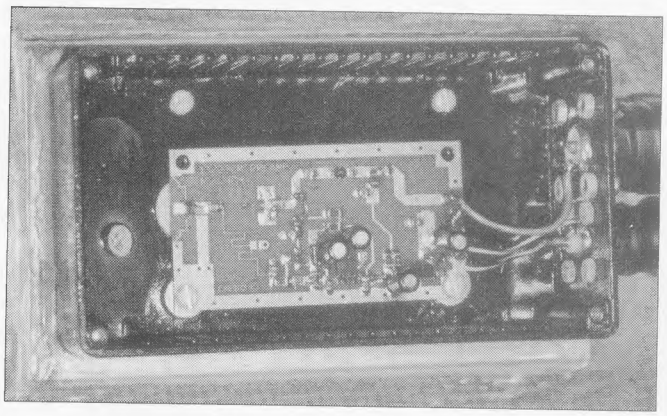
Now is the time to write to your Federal Councillor with your suggestions to make things work better.

This is a photo of the feed horn as used

The original design was to use 2x 125mm x 175mm coffee cans soldered together to form a horn 125mm x 350mm long, however I do not drink coffee. So cans would have meant buying tins of coffee and tipping out the contents.

I opted instead to get a one-piece tube bent up by the local plumbing shop out of galvanized iron. This also removes the need to paint and rust proof the coffee cans. One end of the tube was blanked off and the other has 4 L brackets soldered to it. These mount the horn to the bottom which is made of a perspex disk 170mm x 6mm and this then supports the feed horn and keeps it water proof, snail proof and spider proof.

Going across the top of the horn is a bunch of coax cables going between the shack and the tower. The black metal box contains the antenna and preamp circuit.



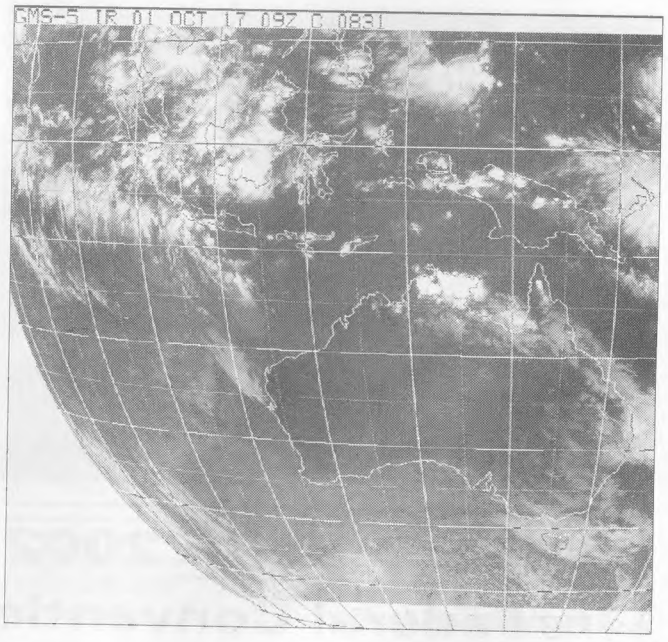
Inside that black metal box

The preamp is a Mini-Kits EME103 1150-2500MHz SMD Preamplifier, the preamp is a dual stage preamp that has a MGF1302 front end followed with an ERA-1 MMIC amp. The preamp is said to have 27.5db gain with a typical noise figure of 2db and requires between 10 and 15 volts. Near the left hand edge of the preamp board just visible is a part of a PTFE disk as seen under the board, this is the bush that allows the antenna to pass between the preamp and the horn, the antenna consists of a piece of bronze welding rod 38mm long and is attached direct to the input of the preamp.

The signal from the dish/preamp passes to the shack at 1691Mhz and is fed into an Icom R100 scanning receiver the audio in turn goes to the computer for processing.

This is a sample of the weather pics being received:

This one is 12 hours before the start of the Classic Adelaide Car Rally on the 27th of Oct 2001



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10am to 2pm

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Sharing the passion

Ian McLean, VK3JQ

"The rig this way is a Collins KWM-2..." or if you catch me on 40 or 80 metres, I'll be running the Collins S-lines.

Why Collins?

Well, it's a passion. Apart from their nostalgic value, they are æsthetically pleasing, they are a pleasure to use and like all things Collins they are engineered to last and bulletproof!

My passion for Collins grew from an early age, seeing an advertisement for a 75S-3 in an ARRL handbook of the 60s. I wanted one!

My first Collins was a 75S-1 purchased from VK3AQI in 1991. 10 years on and the collection has grown to include the 75S-3, 32S-1/3, 51S-1 and the infamous KWM-2/2A.

You just have to love this gear. They look like real radios and better yet, they set the standard of performance for many years. Heathkit heaped tons of flattery on the S-line by producing as close a copy as they could. The Japanese didn't do it until rigs like the TS-930S came along. By a strange coincidence the FT-101 is identical in size and colour to the Collins S-line.

And remember when you could lift the bonnet of the old Holden and actually *see* the engine, well Collins rigs are like that. Lift the lid and you can *see* the radio in all its valve powered glory.

Even after nearly 40 years, the Collins S-Line is perfectly capable of handling today's crowded bands. Though not digital, the PTOs (VFOs) have remained linear and on frequency. It's easy to set the frequency to within a hundred cycles or so. What makes a really nice rig to join in with the boat anchor crowd is a KWM-2 paired up with a 75S-3 receiver. The 75S-3 is much less expensive than the KWM-2's companion 312B-5 external PTO and station console and using separate receiver will give you some very useful features - like dual receive, transceive, transceive in different band segments, receiver with a notch filter and a 200 cycle CW filter, etc. And, if all this wasn't enough, the KWM-2 sounds really nice on the air and its receiver's audio is quite pleasant to my ears.

The Military seem to prefer this older equipment and they remain in service even today. The KWM-2A has seen service in both the Vietnam War and the Gulf war, it is equipment that has stood the test of time. It has proved robust, reliable and easy to operate.

It was the visions of Arthur Collins and the engineers of the Collins Radio Company that made it all possible.

Mr Arthur Collins

The Collins Radio Company

Early amateur radio operators were mainly hobbyists, but there was a sense of discovery during the infancy of radio that provided something more. Radio was the new thing, comparable to what computers mean to technological whizzes in the 1980s. And like the computer hobbyists of today who are writing their own programs and building their own equipment, amateur radio operators in the 1920s were contributing to the knowledge of practical aspects of radio art.

One person caught up in the excitement of radio was Arthur Andrew Collins.

The Collins Radio Company was founded in 1933 by Arthur Collins. Collins, an electronics genius and pioneer, showed interest in radio communications at a very early age. In fact, he obtained his amateur radio operator's license in 1923 at the age of 14. He began experimenting with various radio frequencies and constructing radios.

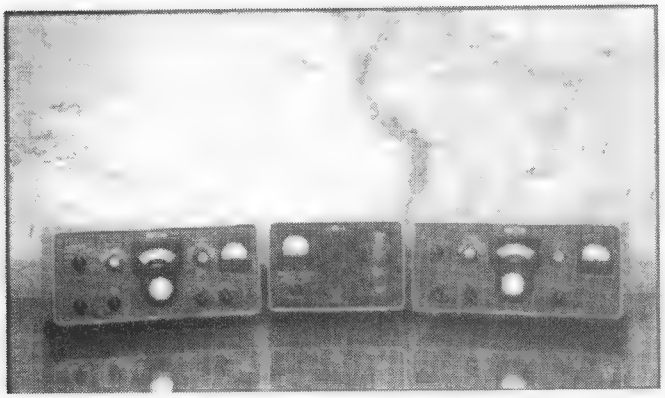
One year later, at the age of 15, Arthur Collins gained national attention when he was able to establish radio contact with the Macmillan expedition during its scientific expedition to Greenland. A U.S. Naval radio station was to have received daily reports from the expedition, but was unable to do so because of atmospheric conditions. Collins, using a radio he had built, got through to the expedition and was the only person to do so.

He talked by code with the people on the expedition, copied down the incoming messages and took them to the Cedar Rapids telegraph office, where the scientific finds that the team had uncovered each day were relayed to Washington.

When the depression hit with full force in 1931, 23-year-old Collins turned his hobby into a vocation. "I picked what I was interested in," he told Forbes magazine years later, "and looked for a way to make a living."

In 1931 Collins set up a manufacturing shop in the basement of his home to make amateur radios. It was the first time such radio transmitting apparatus, of any power output, was available for purchase as an assembled and working unit. In fact, components were hard to come by; they varied widely in characteristics, and there was little, if any, pattern to their construction. Most hams had their radio equipment scattered around a room, usually in a basement or attic where the sight of tubes and wires wouldn't clutter up living areas of a home. Their equipment was strictly functional, almost to the point of inefficiency.

Collins' ham gear was designed to eliminate the clutter by packaging the equipment in neat units. The concept



A basic Collins S-line station consisting of a 32S-1, 312B-4 and 75S-1

proved that correctly engineered construction not only stabilized the circuitry but also made its behaviour predictable. Collins designed circuits, fabricated chassis, mounted and wired in components, tested, packed and shipped each unit. Because the gear was precisely engineered and well-built with the best parts available, it gave years of trouble-free service. A later article in the New York Times quoted a ham as saying, "Collins brought us up from the cellar and put us into the living room." The industrial philosophy of Collins products "quality" was established at the very start.

Catching the Collins bug

So where can you find more information on Collins equipment? You will find most of the information is available on the Internet.

To get you started, you can visit my website at http://www.angelfire.com/de/vk3kcm and follow the numerous Collins links.

The two main sources of information that I can recommend are the Collins Collectors Association (CCA) and the Collins Radio Association (CRA). Both are American based and provide a wealth of data.

The CCA is a non-profit, all volunteer organization and are the largest collectors organization in Amateur Radio today. Their goals are to promote the care and use of Collins Amateur Radio equipment, preserve the history and lore of Collins and provide an information archive.

CCA member-ship is US$20 (USA and Canada), US$25 (All others). To renew or join, send payment to:

The Collins Collectors Association
PO Box 10459
Phoenix, AZ 85064-0459

Their web page is http://www.collinsradio.org/

The CRA exists to preserve Collins Amateur Radio equipment by promoting and encouraging its restoration and on air use. The CRA publishes the Collins journal and sponsors the QTH.NET mail list: Collins@qth.net and the CRA website at www.collinsra.com.

The Collins Journal is published bi-monthly. Subscription rates by first class mailing is US$20 (USA), US$25 (Canada) and US$30 (overseas), payable to:

David Knepper or *The Collins Journal*,
PO Box 34,
Sidman, PA 15955

Books on Collins, *The pocket guide to Collins Amateur Radio Equipment 1946 to 1980* (The book is now Out-of-Print — Over 3,000 copies sold! Limited copies may be available from:

Antique Electronics Supply, Surplus Sales of Nebraska or The Electric Radio Bookstore.) and *A Pictorial History of Collins Amateur Radio Equipment* by Jay Miller, KK5IM, send $39.95 (cheque or money order) plus $6.00 shipping and handling (via airmail), to Trinity Graphics Systems, 5402 Morningside Avenue, Dallas, Texas, 75206

Visit Jay's website at http://www.kk5im.com/index.html for more information.

In conclusion

I have noticed that there must be a fair number of Collins enthusiasts in Australia, judging by the times I have rung the number on a "For Sale" notice, only to find I am about the seventh caller and the seller wishes he had more Collins to sell. If you want it, you have to be quick, because it will be gone if you hesitate.

If you get the chance to use this gear, I am sure you will catch the bug too.

ar

Collins KMW2A

What to do in 2002

JOTA
is October 19th – 20th 200

Be part of WICEN

WICEN is not just for the few. If you live in eastern Australia you are very aware that natural disasters are not programmed—they just happen.

However plans to respond are in place and WICEN is part of this response. Many WICEN groups have been activated in response to the December –January Bush Fires. Should you be a part of WICEN ?

1st VK phone contact with ISS

By Jim Linton VK3PC

Some of us are truly fortunate to do something memorable as part of our hobby amateur radio, and such an achievement has been made by Trevor Smith VK3TI who scored an inaugural voice contact with the International Space Station.

While the Expedition 3 crew had pre-arranged contacts with mostly schools in the United States, Canada and Hawaii, very little normal amateur radio activity had occurred until recently due mainly to the enormous work program of the crews.

On 19 October 2001, at around 23:00UTC, Trevor VK3TI was trying to transfer some digital frames through the space station's packet system. He was in fact engaging in a regular check of its TNC to see if its default "NOCALL" had been changed to callsign of RZ3DZR-1.

As Trevor explains it has been his practice over many, many months to switch to voice if by half way through a pass of the space station he doesn't receive a response frame. He has called NA1SS many times without a reply.

But that changed on 19 October last he said. "To my utter astonishment I heard an American voice come back to me and say, 'would you mind repeating that call'. I responded and added my name.

"Commander Frank Culbertson KD5OPQ replied 'this is Frank aboard the ISS', and I then told him he was 5 x 9. Frank he replied that he was having a little trouble receiving me. This is understandable, as the orbit pass was about 75% completed.

"We exchanged a few more words of a general nature and then he disappeared into the noise and I could hear him working a VK2."

Trevor VK3TI said as far as QSOs go it wasn't the greatest, and with hindsight he has thought of a million things he could have asked the astronaut.

"Personally it was a very special occasion to achieve probably the first CQ response from Commander Gulbertson. As you can imagine there have been hams sitting over their sets worldwide since this occurred and many are rewarded with a contact," he said.

During the contact with NA1SS he was running his rig switched to low power and nothing special in the way of an antenna.

The equipment was an Icom 207-H feeding a 1 metre long mobile duoband mounted about 5-metres above the roofline. The transmit power from the ISS is only 1.5 watts from a hand-held with a specially constructed headset. The antenna systems on board the craft are to be dramatically improved soon.

The Amateur Radio on the International Space Station (ARISS) initial ham equipment was launched in September 2000 aboard the Space Shuttle Atlantis. In the future new antennas will cover HF, VHF, UHF and 2.4 gigahertz. Its callsigns include: US, NA1SS, and Russian, RS0ISS and RZ3DZR.

Trevor VK3TI taperecorded his QSO with NA1SS. On a local net he was so excited that it took a while for others on the net to understand him, but it was congratulations all around once they learn of the what he had in his log book.

He then sent an email report of the contact to ARISS/AMSAT advising them, as up to this time there had been no QSOs reported since the ISS Expedition 3 crew arrived.

Apart from Tony Hutchison VK5ZAI, the ARISS coordinator in Australia who has conducted several telebridges for schools in North America. An almost equally excited Tony replied within the hour that he had no knowledge of any other VK making voice contact with the space station. .

Tony VK5ZAI monitors the ISS frequency 24 hours a day and to his knowledge the VK3TI contact is the first to result from a general CQ call.

Tony felt at that time the same situation existed worldwide. Since then Frank has been very busy on air, especially over the JOTA weekend and thrilled many members of the scouting and ham radio movement worldwide. Among the facts Trevor VK3TI has learnt about the space station is that the normal crew sleep times are 22:00 to 06:00UTC, and that Frank goes to bed late for a six hour sleep. The crew has Saturday and Sunday (UTC time) off duty.

The location of the radio equipment aboard the ship is in an area not normally used, so a crewmember has to make definite decision to be on air.

Was it luck that Trevor VK3TI made the contact after putting out a voice call to the space station on hundreds of previous occasions without success? It was more likely to have been a reward for perservance!

And if you want to give it a try yourself:

International Space Station/ARISS:

Worldwide downlink for voice and packet, 145.80 MHz

Worldwide packet uplink, 145.99 MHz

Voice uplink IARU Region 2 & 3, 144.49 MHz, Region 1 145.200MHz.

Before attempting packet radio contact it is advisable to first check the ARISS webpage for operational details http://ariss.gsfc.nasa.gov/

Once new antennas are installed during a space walk by the Expedition 4 crew early 2002, there are plans to create two ham stations, one for VHF/UHF and the other HF.

ARISS using excellent education material prepared by NASA is also planning more school contacts including with those with students in Australia, but that is story for another writer later.

Measuring Q with the Simple Q Meter

Lindsay Lawless VK3ANJ

A useful task for the Simple Q Meter described in the Feb. 0 1 AR is the comparison of the quality of coils intended for inclusion in aerial coupling units. The transfer efficiency of an aerial coupling unit is {1- (Qo / Qu)} where Qo is the loaded Q and Qu the unloaded Q.

The loaded Q of an L section coupler for example is sqrt. (N -1) where N is the ratio of load to source resistance, thus the transfer efficiency of a coupler coupling a load of 500 ohms to a 50 ohm TX would be 0.97 if the coil Q was 100; ie that coupler would consume 3 watts of every 100 watts input.

To make Q measurement simpler I have modified the original circuit to that of a Mk 2 version shown at Fig. 1. The recommended measurement procedure is as follows;

(a) With S1 in position a and the subject coil disconnected, adjust the RF input to read 10 on the 50 microammeter,

(b) Connect the subject coil between Sol and So2 and change S1 to position b,

(c) Adjust the system for resonance as indicated by a maximum on the meter,

(d) The meter reading is the apparent Q (Qa) of the coil,

(e) Qa = X/(4.5 + Rc) where Rc is the coil loss resistance.

The procedure to (e) is sufficient for comparing coil quality; to ESTIMATE the actual coil Q calculate Rc = (X/Qa)-4.5 and Q = X/Rc.

The justification for the above is provided by the Thevenin equivalent circuit at Fig. 1 (b) Vin is the open circuit volts atSO1 which is Va*(Rb/Rb+Ra)

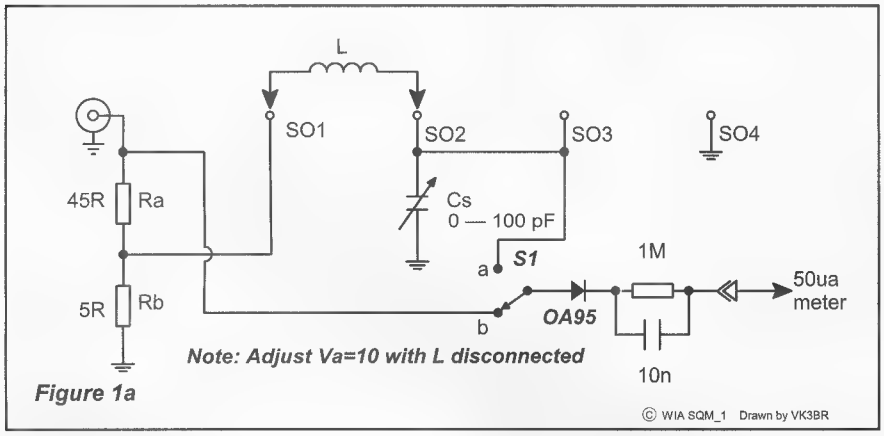


Figure 1a

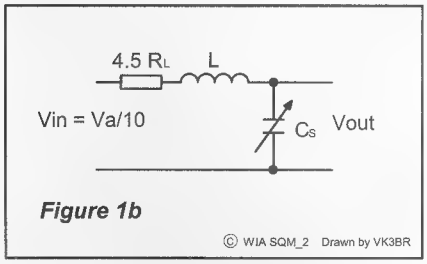


Figure 1b

Silent Key

Rex White VK2AIK

Rex White passed away at home on Friday 23rd November 2001.He had been a "Ham" operator since the 1970s as VK2AIK, from his home at Lawson NSW.

Rex was born in New Zealand on 6 June 1937. Like myself, he started school as the horror that was World War II peaked and finished.

He entered Radio College in Auckland and studied successfully for his New Zealand First Class Commercial Radio Operator's Certificate of Proficiency. With his new licence he went to sea with Union Steamship Company on New Zealand coastal runs. By the 1960s he was on Trans Tasman routes to Sydney and Melbourne. Into the 1970s he remained on the Australian coast with Union Bulk Ships, making his home in Sydney with wife Beat.

I first met Rex when he was "sparks" on the M.V.I'Riadon when she was in Hobart in the early 1970s. He took out his amateur call VK2AIK, at first for his Petersham address, although later they moved to Lawson. We had many a yarn on CW over those years, his telegraphy of course, being a delight to copy. He soon became a 2 metre enthusiast when located in the Blue Mountains.

Daphne, my wife, and I will retain fond memories of Rex and send our love to Beat, his XYL.

Jules VK5JO

Will McGhie VK6UU
21 Waterloo Cr Lesmurdie 6076
will2@iinet.net.au
VK6UU@VK6BBR

LIPDs

The Front Line

If you had said to me several years ago that a radio service was to be introduced onto part of the 70 cm band and placed in the segment occupied by the inputs of some of our 70 cm repeaters I would not have believed such a technically incorrect decision could be made. Voice repeaters are usually located on high hills, masts or buildings with the intention of picking up the weakest signals and usually have high gain omni directional aerials. The power levels used by LIPDs are low but the free space attenuation shows that if there is little topography in the way LIPDs can radiate many kilometres. And they do.

As far as I know amateurs were never consulted about LIPDs and in particular where to place them in the 70 cm band, and this is the crucial point. Why place LIPDs on repeater inputs? Off all the places on the 70 cm band, this is where LIPDs would cause the most problems.

What I find alarming is that the original regulations relating to LIPDs, as written by the ACA, seem now to be ignored by the ACA. It also has been suggested that the LIPD regulation could be re-written by the ACA to simply over come these difficulties in dealing with amateur complaints, even to the point of re-allocating that segment of the 70 cm band so amateurs no longer have access. This, if it be true, is simply not fair.

The ACA have said amateurs by their nature can use their technological knowledge to solve the LIPD problem. I take this to mean use CTCSS decoding on repeater inputs. This would restrict LIPD interference but place the burden on us amateurs to hopefully solve a problem not of our making. It would require modifying all 70 cm repeater receivers in the LIPD band and restricting access to those amateurs who do not have CTCSS encode. This option is not favoured by many amateurs, but we may well be forced into this if we do not wish to change the band plan and move out of the LIPD segment.

There is an increasing feeling that the ACA have little time for amateur problems and if the problem persists or is just too hard then a heavy hand is to be applied. Amateurs understand the ACA have much to do and most of it far more important than administering a hobby activity. Coupled with this is the reduction in staff numbers and the constantly changing technology requiring attention to technologies that are becoming increasingly complex as well.

But surely we do have rights and should expect fair treatment from the ACA and not just accept what ever is dished out to us

These are my thoughts and not necessarily the thoughts of the WIA. There is some opinion that speaking out about issues like LIPDs, and in the process criticising the ACA, may only result in a bad outcome to amateur radio in Australia. Don't stick your head out least you get it chopped off. Perhaps, but it is judgement call and just where to stick up your hand and complain should be a collective call, but it has to start somewhere, and this is coming from those who have to deal with LIPD interference.

One VK6 amateur, Rob VK6JRC, has been intimately involved with LIPD interference to 70 cm repeaters and I asked him to put together a summary of his efforts to track down LIPDs that were causing interference. This is the front line effect to some of our 70 cm repeaters and the time effort and money needed to be expended to try and resolve LIPD interference.

Thanks Rob for this summary.

LIPDs in Perth

This is a time line for 70cm interference issues we have had to my knowledge here in Perth to date so far.

August 1999 - Crane Controller at Midland Brick, Midland. Device was found to be a remote controlled overhead crane controller in the factory. The controller was causing the VK6RTH repeater to retransmit telemetry signals for long periods (hours). ACA investigated a complaint made by WARG and the controller was QSY'ed to another frequency within the 70cm LIPD band.

August 2000 - Crane Controller at a Kewdale steel factory. Device was found to be a remote controlled overhead crane controller in the factory. The controller was causing the VK6RVP repeater to retransmit telemetry signals for long periods (hours). ACA investigated a complaint made by WARG and the controller was QSY'ed to another frequency within the 70cm LIPD band.

October 2001 - Device believed to be a Crane Controller at a Canning Vale Steel factory. The device was causing the repeater to retransmit telemetry signals for long periods (hours). A complaint was made to the ACA, who advised of their new policy in relation to LIPD's;

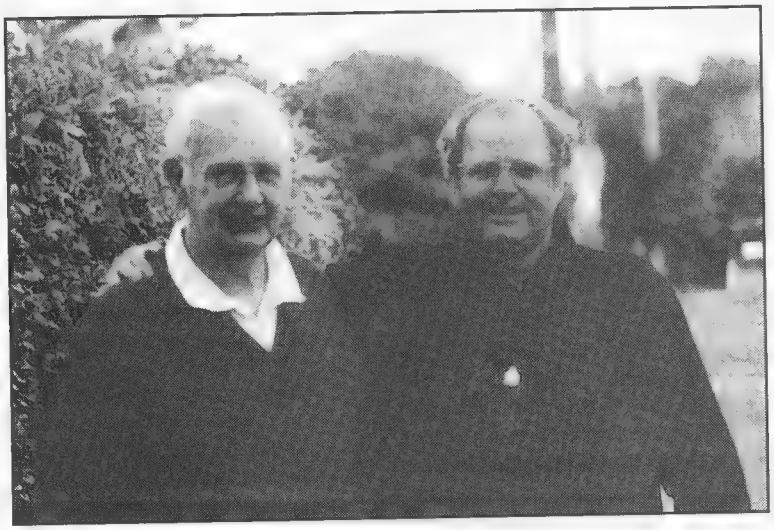
"The ACA's policy on this matter is quite clear. If amateurs choose to operate their repeater receivers in the 433.05-434.79 MHz band, they must accept whatever level of interference arises from LIPD's. This message has been conveyed to the WIA both in correspondence and at meetings. Amateurs, by the very nature of their hobby are well placed to undertake technical measures to resolve problems associated with the operation of LIPD's.

Please note in the correspondence between Spectrum Planning Team and the WIA, that "the ACA intends to make this relationship unambiguous in the relevant regulatory provisions" and "this may involve amendment to the existing Radiocommunications Licence Conditions (Amateur Licence) Determination"."

ACA was advised that no one could be sure what was causing the

WIA Awards Coordinators

The Federal Directors have decided to appoint Mal Johnson VK6LC Awards Co ordinator following the resignation of John Kelleher VK3DP. John served the WIA and the Australian Amateur community well for some 10 years. He made sure the awards system worked well and processed applications for Australian Awards expeditiously. His files of all other Amateur Awards were very extensive and his regular contribution to Amateur Radio magazine was much appreciated. We wish John well in his retirement and we hope that Mal will enjoy his new position. This is another voluntary job within the Amateur Community which is required, if we in Australia are to play our part in the world wide Amateur Community. Thank you Mal for accepting the position.



John VK3DP (left) and Mal VK6LC

Repeater Link

continued

interference until it was investigated and inspected. The device continued to transmit, but eventually QSY'ed to elsewhere in the 70cm LIPD band. The ACA did eventually visit, but could find no QRM on the repeater input frequency. (They were a couple of weeks too late)

As of December 2001, there are three 70cm repeaters operating in the Perth metropolitan area. All three repeaters currently suffer from interference (to varying degrees) on the input frequencies. One repeater (VK6RVP) has been shutdown at this stage as the QRM (a telemetry signal) appears to go 24 hours a day. Efforts will be made to track down the sources of these signals and notify the ACA. What will come from this is anyone's guess.

The Report Card:

Well, interference in three out of three Perth 70cm repeaters, certainly indicates that the interference potential of these class licenced devices is much higher than that "marketed" by the ACA. The ACA have failed dismally and deserve an "F" for their efforts. They now seem to be "acknowledging" their failures by refusing to investigate and QSY these devices.

This is despite the Class Licence LCD for LIPD's specifically stating, "It is recognised that interference arising from the operation of a LIPD is still possible, although under less likely circumstances. As an aid to interference resolution in those circumstances, it is a condition of the operation of a device under this Class Licence that the device not cause interference to other radiocommunications devices; as well, a device will not be afforded protection from interference caused by other radio communications services (see paragraph 4 (1) (b) and Note 1 after section 4 of this Class Licence).

Should interference occur, the onus is on the user of a LIPD to take measures to resolve that interference, for example, by re-tuning or ceasing to operate the LIPD. Some LIPDs are designed so that they are able to be re-tuned, to assist the user in avoiding interference locally."

Paragraph 4(1)(B) reads:

(b) the transmitter's operation must not cause interference to the operation of radio communications services.

Note 1 after Paragraph 4 reads:

A low interference potential device will not be afforded protection from interference caused by other radiocommunications devices. A low interference potential device operated under this Class Licence is generally not expected to suffer interference. However, an individual low interference potential device may experience, from other radiocommunications devices, interference arising from the particular circumstances of the device's operation.

Hmmmm, seems like the roles have been reversed for AR operators.

Regards, Rob, VK6JRC

For further reading, December 2001 QST magazine on page 9 has an article about the introduction of LIPDs in the United States and the intention of the ARRL to fight their introduction.

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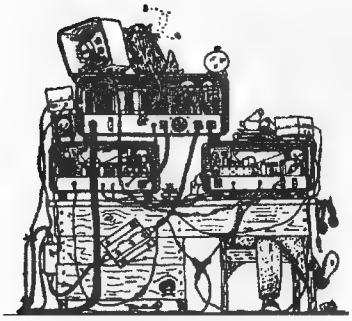

Ham Shack Computers

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Part 10 "Cleaning Windows"

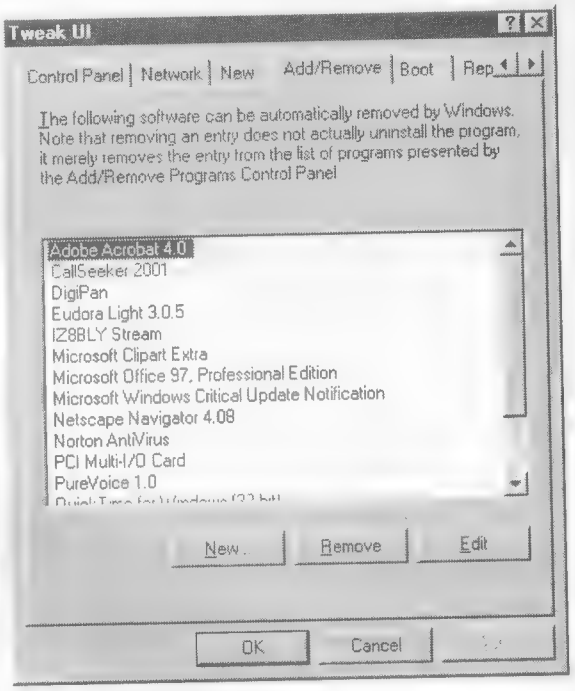
Some readers might think that this topic is rather dull and silly – please think again! It the most important regular "tweaking" activity that you will ever do easily to make your Ham Shack Computer run like clockwork, and minimise errors - read on.

Many PC users feel that they just want to "do things" with their computer, and not bother to learn the basic tasks of correctly operating or maintaining it. However, RA's are "tweakers" by nature, and the following tips for Win 95/98 users will give their Ham Shack Computer a breath of fresh air.

1. **Cleaning floppies.** Collect all those floppies around the shack. If the data is not required, re-format them from My Computer, select Format. Now you have a nice collection of "new disks" ready for further use.
2. **Backup log and data files.** Use your new stack of salvaged floppies to backup files and programs that might be needed for your Ham Shack.
3. **Uninstall obsolete programs.** Unused programs will slow down your computer. Remove these from Control Panel, Add/Remove Programs then choose the ones to uninstall.
4. **Clear out the rubbish.** Windows stores many temporary files, and Internet files. Run Disk Cleanup from Start, Programs, Accessories, and then System Tools.
5. **Run ScanDisk.** From the same directory above, run ScanDisk to check all your drives for errors, and to fix any errors.
6. **Speed up program loading.** In Win 98, a small program called walign.exe organises programs on your hard drive to speed up loading. Go to Start, Run, and type in walign, the click Run.
7. **Defragment hard drives.** With use your hard drive gets rather untidy with clusters of data all over the place. This slows down access to programs and data. Using the same Accessories directory as ScanDisk, select Disk Defragmentation. If you've not tried this before, it might take several hours to complete. Watch the evening movie on telly while your computer fully completes this task.
8. **Check applications.** You might have more programs running than you think. Using the Windows System Information Utility, go to Start, Programs, Accessories, System, Tools, and System Configuration Utility. You can now decide which programs will start automatically when your PC is switched on. Don't disable programs that you will need.
9. **Memory management.** Windows uses a "swap file" to store temporary data while you work on the PC. To speed things up, setup a permanent swap file by right clicking on My Computer, Properties, Performance, Virtual Memory. Now select "Let me specify my own virtual memory settings" A good amount to enter would be about 2.5 times the amount of RAM in your PC. Once done, reboot and run Disk Defragmenter again. Note there is now less hard drive activity.
10. **Update to 32 bit FAT.** FAT means File Allocation Table. It's like the index to a good book – only it manages the file placement on your PC. Check this by clicking My Computer, right click on C:\drive then click Properties. If you have FAT32, you can see this under the General tab. If not, go to Start, Programs, Accessories, System Tools, and follow the directions. If the converter is not listed, go to Control Panel, Add/Remove Programs then Windows Setup to install Drive Converter.
11. **Faster setting.** If you have more than 32 MB of RAM, programs can be speeded up by operating your PC as a Network Server. Right click My Computer, Properties, Performance then File System. The "Typical Role" should be changed to "Network Server" – even if you are not connected to a network!
12. **Registry backup.** In case of disasters, backup your Windows Registry. Just click Start, then Run and type in the command Scanregw and hit OK to backup the registry.
13. **TweakiUI.** A very powerful Microsoft advanced user program on the Windows 98 CD-ROM in the ...\tools\reskit\powertoy directory. Right click on the tweakui.inf file – then select install. Place a TweakUI shortcut on your desktop and run. Move through all the options and read all the fine details before any changes are made. For good example, to get rid of the Windows splash screen and speed up the opening of Windows, uncheck the tick in the Boot menu option in TweakUI. On restart, your computer will load Windows faster without the boring Win 95/98 opening splash screen. TweakUI offers dozens of useful options to help streamline the operations of your computer. Once tried, TweakUI will become one of your essential tools for PC maintenance. If you load and try new software, only to decide that it's no longer needed – but you cannot clear the software from the Add/Remove list

– try TweakUI to cleanup the list once and for all. You can also Rebuild Icons, Repair System Files and prevent uninstalled disk drives from being displayed.

14. **Finally.** Having worked nice and slowly through steps 1-13, reboot your computer and run ScanDisk first then Disk Defragmenter once again. This will ensure that all the settings are enabled, and the data clusters on your hard drive have been placed in a contiguous order. The general speed of your computer will be much faster – which is why we started this lengthy process in the first place!
15. Clean the glass on your **monitor** with Window cleaner, and polish with a soft cloth.
16. Remove **the keyboard** and clean the keys, and between the keys, with a soft dampened cloth like "Super Wipes" and one drip of washing up liquid.
17. The **inside of your computer** can be cleaned by gently using a 10mm paintbrush, and a vacuum cleaner to suck out dust and "doggy hairs".
18. **Gold plated contacts** on RAM chips and other boards can be cleaned with a common plastic pencil eraser.
19. **Floppy and CD-ROM drives** can very easily removed from the case, and are cleaned with a 10mm paintbrush and the household vacuum cleaner. Be very careful with the read/write head on the floppy drive. The optical laser head on the CD-ROM is cleaned with a photographic lens tissue.
20. Internal/external **Zip and LS120** drives are more difficult to clean. Try the vacuum cleaner trick with a small funnel attached to concentrate the sucking action to remove dust.
21. If you are lucky enough to have a **standby, no-break power supply** (EG: on a BBS or Internet node for example). Run your favourite program on your computer, then switch off the power input to the supply. Your computer should run properly for at least 60 seconds. Switch the power to the supply back on and the operation should be restored. If the power supply cannot sustain 60 seconds, check the battery is fully charged, or replace the battery with a new one (DSE S3321). Some standby power supplies have software control through a spare comport. CheckUPS is one example where the software can be programmed to close down your computer. A nice touch in the case of sustained power failure. This is a cost-effective option, and will protect the valuable data on your hard drive too!



22. **Power Surge Suppressors** are highly recommended to prevent any "nasties" zapping your PC switch-mode power supply. They are being bought as part of the common multi-plug boards at your local emporium. Some of the more expensive varieties offer EMC protection and are worth looking at.
23. **Shack RF grounding.** Like your other Ham Shack equipment, ground the case of your computer to your main station signal earth. If you don't have a station earthing system – **THEN FIT ONE NOW!**
24. To install a convenient PC **common earthing terminal**, drill a 5.0-mm hole in the rear panel of the PC chassis. Fit a 5.0-mm x 20-mm long stainless steel bolt through the hole. Use serrated washers and secure with two lock nuts. Then use two plain washers followed by a wing nut. Coaxial cable braid can be connected to the terminal and station earth.

Review

If you have had the courage and conviction to work through ALL of the last 24 points carefully, you should end up with a fine Ham Shack Computer. In addition, you'll have learned at lot in the process. On the other hand, if you dismiss these topics because you may think they are to complex, then start reading this article again until you feel confident to do it all on your own. It will take a full weekend of spare time but the rewards will impress you time and time again.

Ham Tip No. 10.

Thinking about buying a new shack transceiver? Choose one WITH computer control. You will be thrilled to see your new acquisition being operated from your Ham Shack Computer – AND the resale value will be higher!

In the future, transceivers will be fully programmable just like a computer. Software controlled radios are slowly emerging but are far too expensive at the moment and are only currently being adopted by the military. But the manufacturers are thinking and development is improving slowly driven by consumer market forces. Perhaps we will eventually be able to "plug-and-play", and buy "plug-ins" to do just what we want to do with our Ham Shack Computer. One can only dream - Hi.

Ham Shack Computers, No: 11 "Multi-Modes" features a range of software for CW, RTTY, PSK31, and much more...

(1) Ham Shack Computers Web Site: http://www2.tpg.com.au/users/vk6pg

73s de Alan, VK6PG

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Active Door Loop Receive Antenna	Gil Sones VK3AUI	October	25
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Classification of emissions: Episode two

Henry ANDERSSON VK8HA, FedIWCOORD
VK8HA@OCTA4.NET.AU

Section II—Classification

#3 The class of emission is a set of charateristics conforming to #4 below.

#4 Emissions shall be classified and symbolized according to their basic characteristics as given inSub-Section IIA and any optional additional characteristics as provided for in Sub-Section IIB.

#5 The basic characteristics (see Sub-Section IIA) are:

1) first symbol-type of modulation of the main carrier.

2) second symbol-nature of signal (s) modulating the main carrier.

3) third symbol-type of information to be transmitted.

Modulation used only for short periods and for incidental purposes (such as, in many cases, for identification or calling) may be ignored provided that the necessary bandwidth as indicated is thereby increased

Sub-section IIA-Basic characteristics

#6 1) First symbol-type of modulation of the main carrier.

1.1) Emission of an unmodulated carrier N

1.2) Emission in which the main carrier is amplitude-modulated (including cases where sub-carriers are angle-modulated

1.2.1) Double-sideband A

1.2.2) Single-sideband , full carrier H

1.2.3) Single-sideband, reduced or variable level carrier R

1.2.4) Single-sideband, suppressed carrier J

1.2.5) Independent sidebands B

1.2.6) Vestigal sideband C

1.3) Emissions in which the main carrier is angle-modulated.

1.3.1) Frequency modulation

1.3.2) Phase modulation

1.4) Emission in which the main carrier is amplitude and angle-modulated either simultaneously or in a pre-established sequence D

1.5) Emission of pulses

1.5.1) Sequence of unmodulated pulses P

1.5.2) A number of pulses

1.5.2.1) modulated in amplitude K

1.5.2.2) modulated in width/duration L

1.5.2.3) modulated in position/phase M

1.5.2.4) in which the carrier is angle modulated during the angle-period of the pulse Q

1.5.2.5) which is a combination of the foregoing or is produced by other means V

Episode Three will be in next issue of AR.

Cheers and all the best from Henry in Humpty Doo.

VK8HA-FED.IW CO-ORD.

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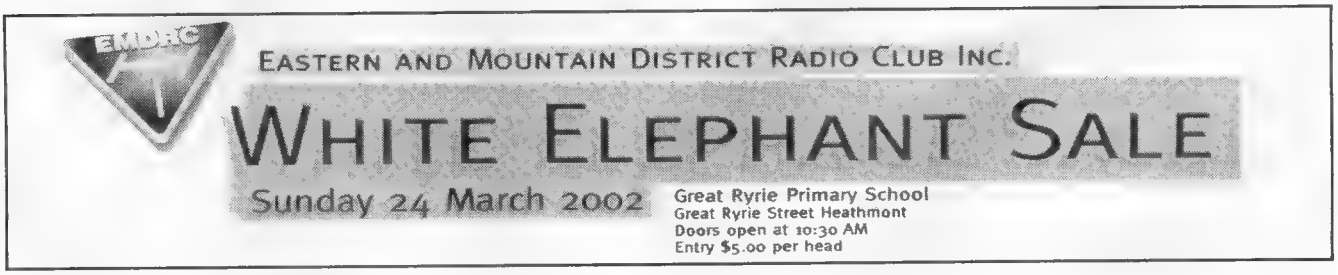

EASTERN AND MOUNTAIN DISTRICT RADIO CLUB INC.
WHITE ELEPHANT SALE
Sunday 24 March 2002
Great Ryrie Primary School
Great Ryrie Street Heathmont
Doors open at 10:30 AM
Entry $5.00 per head

ALARA

Christine Taylor VK5CTY
VK5CTY@VK5TTY or geencee@picknowl.com.au

Happy New Year to everyone!

I hope the festive season was good to you and yours and that you are all ready to enjoy the coming year. If you are planning an overseas trip remember to include Palermo in June to share the International YL Meet. If you are planning your trip around Australia don't forget to be in Murray Bridge for the long weekend at the beginning of October for the ALARAMEET 2002.

These will both be memorable occasions for YLs and for OMs. For more information go to the websites (or ask someone else to do it for you) at

Web site: http//www.qsl.net/y12002
Or
buscemi@skyol.it
or, for the ALARAMEET
http://alarameet2002.8m.com

A very special award

Marilyn VK3DMS has been interested in stamps for a long time but the first world stamp exhibition she visited was in Melbourne in 1968. As a consequence of that event she became a serious collector and exhibitor. One of these days she would like to be as good as the collectors exhibited in Melbourne. She is especially interested in thematic collections. In a thematic display the collection often tells the geography or history of a topic though stamps.

Marilyn's first exhibition theme was minerals but when she took up amateur radio she started her "Radiomania" collection. She tells the history of radio, the people and the inventions and all the many aspects of tele-communications, through stamps and postal material from all round the world.

At the Melbourne Ausipex one of the awards was for the Top Lady Thematic Exhibitor. This was won by Mary Ann Owens, an American exhibitor. The prize was a beautiful opal necklace donated by a Melbourne jeweller.

Since the first competition display in 1991 Marilyn has exhibited many many times in many parts of the world, building and improving the collection all the time. She has won numerous prizes and medals although; up to now, the elusive Gold medal has eluded her. This year her "Radiomania" collection has been to Calcutta and Brussels and, most recently to Brisbane for "Stampex 2001".

In Brisbane Marilyn was adjudged as "Top Lady Thematic Exhibitor" and was awarded the original opal necklace, donated back by Mary Ann Owens for the same category. To say Marilyn was thrilled is inadequate. She was quite "blown away" by the coincidence and by the necklace.

In her own words: "When I am much older and decrepit, I will donate it back again for some other lucky lady!"

I think we can say Marilyn has equalled those people she admired so much 17 years ago. Well Done!!

Visitors

Late month I reported the visit to Australia of Maxie DJ4YL and her sister, Marile. This month Rosemary ZL1WRO and her OM Ralph ZL4AG where in Adelaide. They have family in Melbourne and Sydney but spent a week in Adelaide between the two groups. They did not have much opportunity to meet too many VK5s but enjoyed a lunch in the city and a tour of the country, including our shack in the bush, with my OM Geoff and myself which also included a visit with Jean VK5TSX and her OM Rod VK5SX in their caravan at Mannum.

They say they will go back to ZL singing the praises of our state. As they did not get to see Murray Bridge perhaps they will be back next year for the ALARAMEET.

The ALARA Buy and Sell: Meg VK5YG, Marilyn VK3DMS, Christine VK5CTY, Tina VK5TMC, Shirley

Club activities

Pat VK3OZ told us on the Monday Net about the recent Fox Hunt and Picnic run by the radio club they attend. Judging from the number of participants in the foxhunt – with three foxes there were plenty of signals to chase – and the number of cars involved, it was a great success. The Picnic the next weekend was a fitting end to the year's activity.

In VK5 the YL members of AHARS and other members of ALARA ran the usual pie and pasty and drink stall at the "Buy and Sell" there was no dearth of customers and many friends to greet. The annual photo of the VK "thrives" does not show all the ladies present.

If you look closely you may be able to see the opal necklace around Marilyn's neck.

The ALARA Contest Results

The full results should be in the February Contest column but there is no doubt that it was a very successful contest. Everyone seems to have liked the new date and longer hours. This is reflected in the almost doubling of the logs submitted. HOWEVER not everyone did remember to send in their logs. Please remember next year!

Gwen VK3DYL was again the overall winner with a score of 786 and Bev VK4NBC was to top scorer in the Novice section, with Bev ZL1OS again the top ZL YL. These girls work hard to make those contacts. Well Done!

The biggest thrill for ALARA, though, is that we have a winner this year (Pat VL3OZ) for the Florence McKenzie Trophy for the top scorer on CW. Now that the speed requirements have been lowered for CW there are fewer people using the code in contests. It is increasingly difficult for anyone to make

enough contacts to win this trophy nowadays.

Thank you for your perseverance, Pat, and thanks to those who gave her CW contacts.

ALARA is very proud to recognise the first VKYL amateur, Florence McKenzie (VK2GA) and to keep her memory fresh by this trophy donated by the VK4 amateurs.

Congratulations and thanks, Pat.

From the Contest Manager:

"Almost every log received had a favourable comment about the change of date. Four logs were received by email this year. I hope more will use the facility next year as it helps to get the logs in on time. It was great to see a club station again this year, the Townsville ARC, who used their special event callsign VI4FLG.

With all the positive feedback about the changes, the ALARA Contest for 2002 will be **the last full weekend of August 24/25th**

Please spread the word around about the friendly contest and please be there yoursleves."

ar

Club News

Adelaide Hills Amateur Radio Society

The last official meeting for the year was a great success. Members, asked to bring something along that they find most useful brought an amazing range of items.

As is usual. They were asked to tell everyone why they found these things useful to have so it was an evening of variety.

One of the oldest items on display was the original Z match made by Phil VK5NN, which he accompanied by one of the latest automatic tuning devices. Although the new one is great he still finds the original one better on some bands.

We were shown the latest multimeter (Linden VK5SWR) alongside one that was possibly 20 years old but had the virtue that it had an inbuilt VHF capability (Hans VK5YX). Both universally useful.

Jim VK5JST talked about and demonstrated breadboarding from the resistor hung by a string from the ceiling with everything else attached (until the weight of just one more component caused the 'cat's cradle' to collapse with bangs and smoke) to the latest white boards with the inbuilt connections. This presentation won the prize for the evening.

One most interesting demonstration was the portable radio set-up shown by Steve VK5AIM. This is what he and his XYL take when they go down to the beach on a hot night.

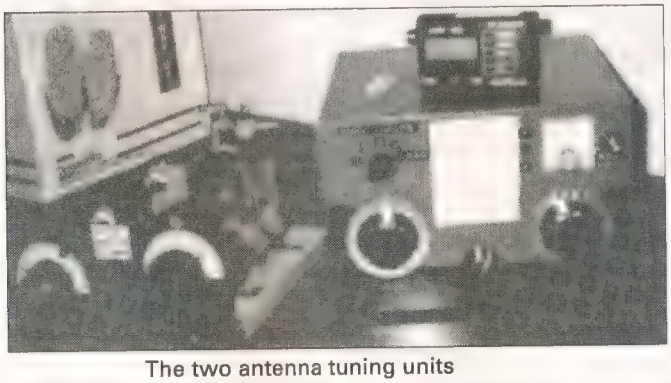
It consists of a case to carry the radio itself which converts to a stand on which the radio sits when in use, a vertical aerial which can be jammed into the sand and the power supply.

The power supply can just be a 12-volt battery or, if they go to the beach early enough, a small solar array that can produce enough energy to contact the world. As you can imagine many of the beach strollers stop to ask what the rig is all about and to learn something about amateur radio. What good publicity, especially when a contact is in progress!!

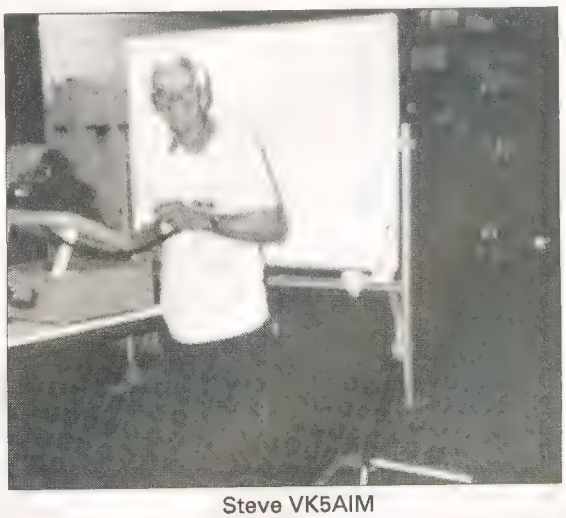
In December AHARS will have it's Christmas Dinner and in January there will be a more informal meeting as the school used during the year is unavailable in school holidays.

Once normal meetings start on the third Thursday in February visitors to VK5 are welcome.

ar



The two antenna tuning units



Steve VK5AIM

coming in February Amateur Radio
- Harry Angle Sprint Results
- ALARA Contest Results

Technical Abstracts

Gil Sones VK3AUI
30 Moore Street, Box Hill South, Vic 3128

WBR Receiver

The WBR receiver is a regenerative receiver which uses a coupling method reminiscent of a wheatstone bridge. Dan Wissell N1BYT described the receiver in QST August 2001. The receiver uses a circuit reminiscent of a wheatstone bridge type of circuit to couple the antenna to the receiver oscillator and infinite impedance detector. This design is claimed to minimise antenna radiation, frequency pulling, microphonics, and hand capacitance effects which can make regenerative receivers difficult.

The circuit is given in Fig 1. The bridge is formed by L1 which is centre tapped and the capacitors C5 and C6. The tuned circuit comprises L1 and capacitors C7 and C8 and the capacitance of diode D1. The antenna is coupled to the bridge at the midpoint of Z1 which is a one inch length of 20 gauge wire connecting the centre point of L1 to ground. The antenna is connected via R3 a 1 kohm linear pot which is used as a signal level control and hence the volume control. The oscillator signal is more than 40 dB down at the connection point to Z1 from that at the ends of L1. This is good antenna isolation which will minimise the effect of the antenna on operation and also reduce oscillator radiation.

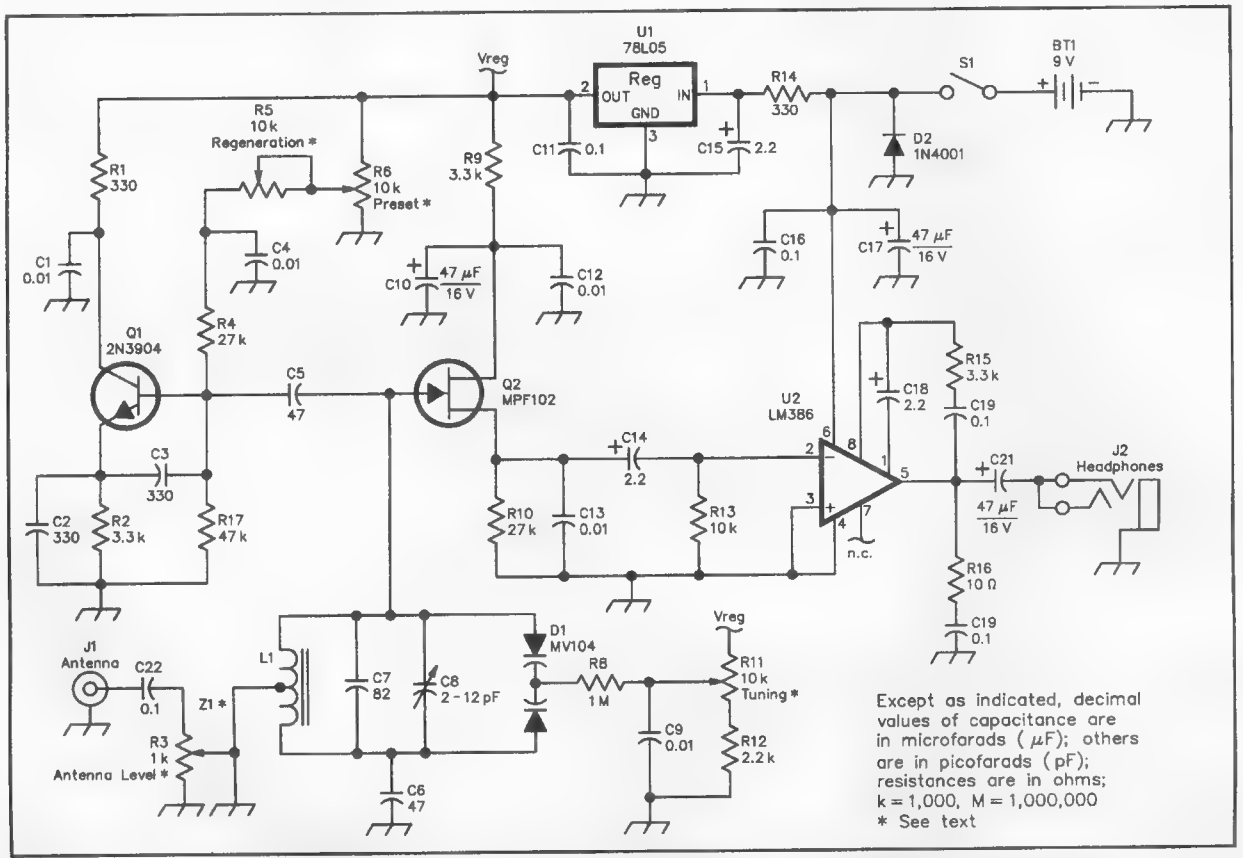


Figure 1—Schematic of the WBR receiver. Unless otherwise specified, resistors are ¼-W 5% tolerance carbon composition.

C2, C3—330 pF, 5% NP0
C5, C6—47 pF, 5% NP0
C7—82 pF, 5% NP0
C8—2-12 pF NP0
C1, C4, C9, C12, C13, C19, C22—0.01 µF
C11, C16, C20—0.1 µF
C10, C17, C21—47-µF, 16-V electrolytic
D1—MV104
D2—1N4001
J2—Three-conductor phone jack, ⅛ inch.
L1—Approximately 3.7 µH: 28 turns of #22, center tapped, on T-68-6 core (yellow).
Q1—2N3819
Q2—MPF102
R1, R14—330 Ω
R2, R9, R15—3.3 kΩ
R3—1 kΩ linear-taper potentiometer. Panel mount.
R4, R10—27 kΩ
R5—10 kΩ linear-taper potentiometer. Panel mount.
R6—10 kΩ linear-taper potentiometer. Panel or PWB mount.
R7—47 kΩ
R8—1 MΩ
R11—10 kΩ, 10-turn potentiometer. Digi-Key # 3590S-1-103-ND.
R12—2.2 kΩ
R13—10 kΩ
R16—10 Ω
S1—SPST
U1—78L05
U2—LM386

Fig 1 WBR Receiver Circuit Diagram.

L1 is wound on a yellow T-68-6 toroid core. The inductance is approximately 3.7 microhenry from a centre tapped winding of 28 turns of 22 gauge wire. The tuned circuit covers the 7 MHz band.

The tuning control is R11 which is a ten turn 10 kohm potentiometer. This provides a variable tuning voltage to the variable capacitance diode D1.

Q1 is configured as a Colpitts oscillator. Oscillation is controlled by varying the base voltage. The regeneration controls are R6 which is a 10 k preset potentiometer and R5 which is a panel mounted 10 k regeneration control. R6 is preset to give a useful range of adjustment for R5.

Q2 is configured as an infinite impedance detector.

A regulated supply is used for the oscillator, detector, and the tuning diode. this is provided by the three terminal regulator U1.

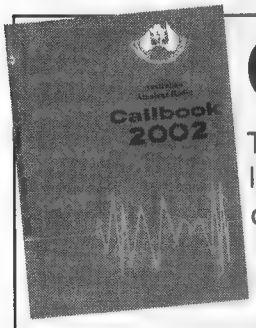
An LM386 is used as the audio amplifier. This is adequate for headphone reception when used on the forty metre band with a dipole antenna.

Components are relatively non critical. The capacitors below a value of 330 pF are all NPO ceramic. The 0.01 and 0.1 mF capacitors are all small ceramics. The original was built using "dead bug" or ugly construction on a piece of printed circuit copper clad laminate. High value resistors or bypass capacitors were used as standoffs. Looking at the circuit there are not many points where a standoff is required.

Operation is from a 9 volt battery which should last a fair time. This avoids any problems with other power supplies.

Operation on other bands would be possible by varying tuned circuit components and also capacitors C5 and C6. However this will require some appreciation of how the receiver works.

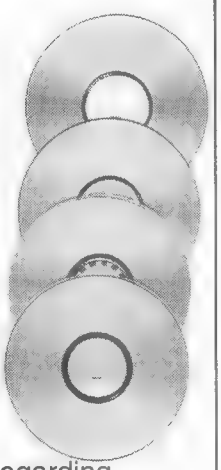
As with all regenerative some experimentation with control settins is required to achieve best performance.



Callbook

This year's callbook is a shortened version containing only the VK call signs and little peripheral information. Its price reflects its shortened format by being considerably less at $15.00 (plus postage and handling).

Callbook on CD Rom



This year WIA is offering the 2002 Callbook as an Acrobat file on a CD Rom, also for $15.00 (plus postage and handling)

The advantages of CD Rom is that the files are searchable by callsign address, surname, postcode or even suburb, virtually whatever you want.

The attached search program, Acrobat Reader, is the world's most popular reader of files and is completely cross-platform compatible, it works on all computers.

We have included readable,searchable and printable files of the 2001 information regarding

- Examiners
- WIA Divisional Information
- Wicen
- ACA information
- Operating information
- Radio and TV Broadcast Stations
- Internet Addresses of Interest
- Affiliated Clubs
- Travellers nets
- Operating —special interest groups
- Repeaters and Beacons
- Useful forms.

Order through your local Division contact details on page 30

Ask about the price of the Book and the CD if bought together.

Silent Key

Ronald McDouall Stuart VK2ASJ

20/10/1921 —9/7/2001

Ron carried a physical disability from his birth on 20 October 1921. His condition was described at that time as congenital spastic paralysis. These days we would probably say Palsy. His disability was entirely physical. Being highly intelligent he led a very positive and useful life, contributing effectively to community affairs.

Ron developed an interest in radio in his very early years. When we had probably the only radio in the street and neighbours used to come and listen to the tests. Those years the sound of bat hitting ball was produced by tapping a pencil on the table and the shout of *Rickety Kate* meant a wicket had fallen. His interest intensified when we obtained (what was then upmarket) an AWA Fisk Radiola. It had shortwave and Ron concentrated on picking up anything (local or overseas) and learning to read Morse code.

The Shortwave came in handy during the war years when he t... with the volunteer air o... was able to play a ma... plane that had lost its c...

Keen observer: Ron ... in distress ... used his short-wave radio to help several aircraft

Post War Ron pursued his interest in radio. He sat for the exam and became the proud operator of stationVK2ASJ. Naturally because of his physical handicap, he could not repair and maintain his receivers and transmitters and was dependent on his amateur radio mates for help; and help they did! If he was missed on a sked or wasn't on air for a couple of days, the phone would ring and the hams would arrive. His uncontrollable hand movements prevented the use of a standard Morse key. Harold Whyte VK2AHA (SK) made up a foot key and Ron was able slowly, but quite effectively, to tap out messages.

Only last year Ron received from the New South Wales Division, a certificate congratulating him on 50 years membership of the Wireless Institute of Australia and dedication to amateur radio. He was the first to acknowledge that these years of membership were only possible because of help from his fellow hams. Ron was very proud of his amateur radio associations and when anyone inadvertently and somewhat unwisely said that he was a CB operator, he smartly corrected them, pointing out that amateur radio operators had to sit for an examination and fulfil the government regulations. Ron's other interests included all sports, but mainly cricket. He was also church secretary at one time and their publicity officer for 26 years.

PLANE IN DISTRESS OVER NEWCASTLE

Its petrol supply running low, a Douglas ... ing 26 passengers circled round Newcastle ... night firing flares and signalling for landing ... Through the efforts of the Volunteer Air Observers' Corps, it was brought safely to an emergency landing

The plane was on its way from Queensland to Sydney. It was first seen sending out signals over Cardiff by Mr. G. A. McDonald, a member of the VAOC. Though he was not rostered for duty at the time—shortly before 8 pm—he rang the control post at Newcastle.

When the controller on duty at Newcastle headquarters of the VAOC (Mr. J. H. Pragnell) received the message, he telephoned through to a nearby air station, and gave advice of the plane's plight. He also telephoned to the Stockton VAOC post, where Mr. R. Stuart, who has previously been instrumental in saving a Liberator and a Douglas, picked up a message on his short-wave set from the plane, indicating that petrol was low and that it must land immediately.

The air station was advised again, a flare path was laid down, and the Douglas "homed in" with searchlights.

In the meantime, the plane had been circling over the district. At one stage the pilot dropped a flare on the aerodrome at District Park, but decided, because of its size, against risking a landing.

This morning, with petrol tanks filled, the plane resumed its interrupted flight to Sydney.

RONALD McDOUALL STUART
20/10/1921 - 9/7/01

Ode to Ron Stuart

My friend, Patron of Stockton Cricket Club, Life Member and a Great Bloke.

Playing for Stockton will never be the same
Without you Ronny at our games.
To walk out and play in front of you
All players knew only the best would do.
Through the good and the bad you always stuck fast
To the boys from Stocko you just showed your class.
You could get a five or score a ton
Then to look at you and see a smile and a clap
And not forgetting the tipping of that famous floppy hat.
We loved you mate,
You made playing for Stockton so great
So, at a day's end
When you walk from Lynn
Take some time and let this sink in,
Show some respect and tip your hats
To where he would sit
Because we loved you Ronny Stuart
And that's it!

John Allanson 13/7/01

Ron lived at home in Dunbar Street, Stockton until he entered the hostel section of Wescott Nursing Home on 31st January 1997. Even though Ron had a heart condition, his death was sudden and unexpected. Representatives at the funeral were some family members of the late Harold Whyte VK2AHA together with Bill Hall VK2XT, Merv Hardy VK2DA, Norm Stanley VK2BNS and Ron's second op: Darryl Boyce.

W McD Stuart
98 Dunbar Street
Stockton 2295

Silent Keys

Les Kinch VK2BBD JP

It is with sadness that I inform you of the passing of Les Kinch ex VK2BBD. At his home in Phoenix Arizona USA on 3rd December 2001.

Les was born on Christmas Day 1926, served in the Merchant Navy and later in the Army for 21 years as a Communications Specialist. He arrived in Australia in 1968 when he was allocated the call VK2BBD

Les was a longstanding member of the Manly Warringah Radio Society, until he moved to county NSW ,where he was instrumental in the starting of the Ex Manly Warringah Radio Society Net (3.590 Mhz 0630 EST) in 1983.Les was a pioneer in the use of computers in ham radio. He later moved to the UK in 1995, then Arizona USA in 1998.

Les is survived by his wife Alice, a son and daughter.

VK2KJB

Fred Stirk VK2ABC

Frederick James Stirk ex VK2ABC passed away on 15th September 2001 aged 86 years. Fred had a lifelong involvement with Radio. Gaining his Amateur Operators Licence at age 16 as VK2XV, he operated briefly as VK4XV and later VK2ABC. Early working years were radio related, first with retail outlets and then with radio Stations, 2GB, 2KA and 2WL.

In World War 2 in the RAAF he served in North Queensland and New Guinea, with the rank of Flying Officer.

Several proficiency awards and certificates were gained and Fred became a member of the Australian Institute of Radio Engineers.

Many enjoyable hours were spent contacting amateurs locally and overseas. Coloured pins on a map in his radio room denoted worldwide contacts and his treasured collection of QSL cards numbered thousands.

Frequent certificates were gained in annual WIA competitions, often 1st place. Fred also wrote some articles for "Amateur Radio". Fred's final award was a certificate of congratulations, presented at the WIA Headquarters in April 2000. The citation read "For 68 years membership of the WIA and dedication to Amateur Radio".

Ada Stirk
(QTHR for VK2ABC in 2000 Callbook)

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VX-5R pictured showing large frequency digits

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Division Directory

The Amateur Radio Service exists for the purpose of self training, intercommunication and technical investigation. It is carried out by amateurs who are duly authorised people interested in radio technique solely with a personal aim and without pecuniary interest.

The Wireless Institute of Australia represents the interests of all radio amateurs throughout Australia. National representation is handled by the executive office under council direction. There is one councillor for each of the seven Divisions. This directory lists all the Divisional offices, broadcast schedules and subscription rates. All enquiries should be directed to your local Division.

VK1 Division Australian Capital Territory,
GPO Box 600, Canberra ACT 2601

President	Gilbert Hughes	VK1GH
Secretary	Peter Kloppenburg	VK1CPK
Treasurer	Linden S Orr	VK1LSO

VK2 Division New South Wales
109 Wigram St, Parramatta NSW
(PO Box 432, Harris Park, 2150)
(Office hours Mon-Fri 1100-1400)
Phone 02 9689 2417
Web: *http://www.ozemail.com.au/~vk2wi*
Freecall 1800 817 644
e-mail: *vk2wi@ozemail.com.au*
Fax 02 9633 1525

President	Terry Davies	VK2KDK
Secretary	Pat Leeper	VK2JPA
Treasurer	Chris Minahan	VK2EJ

VK3 Division Victoria
40G Victory Boulevard Ashburton VIC 3147
(Office hours Tue 10.00 -2.30)
Phone 03 9885 9261
Web: *http://www.wiavic.org.au*
Fax 03 9885 9298
e-mail: *wiavic@wiavic.org.au*

President	Jim Linton	VK3PC
Secretary	John Brown	VK3JJB
Treasurer	Barry Wilton	VK3XV

VK4 Division Queensland
PO Box 199, Wavell Heights, Qld. 4012
Phone 07 3221 9377
e-mail: *office@wiaq.powerup.com.au*
Fax 07 3266 4929
Web: *http://www.wia.org.au/vk4*

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VK5 Division South Australia and Northern Territory
(GPO Box 1234 Adelaide SA 5001)
Phone 0403 368 066
web:*http://www.sant.wia.org.au*
email: *peter.reichelt@bigpond.com*

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VK6 Division Western Australia
PO Box 10 West Perth WA 6872
Phone 08 9351 8873
Web: *http://www.vk6wia.org*
e-mail: *vk6wia@iinet.net.au*

President	Neil Penfold	VK6NE
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Treasurer	Bruce Hedland-Thomas	VK6OO

VK7 Division Tasmania
PO Box 371 Hobart TAS 7001
Phone 03 6234 3553 (BH)
Web: *http://www.tased.edu.au/tasonline/vk7wia*
also through *http:/www.wis.org.au/vk7*
email: *batesjw@netspace.net.au*

President	Phil Corby	VK7ZAX
Secretary	John Bates	VK7RT
Treasurer	John Bates	VK7RT

Broadcast schedules

All frequencies MHz. All times are local.

VK1WI: 3.590 LSB, 146.950 FM each Thursday evening from 8.00pm local time. The broadcast text is available on packet, on Internet *aus.radio.amateur.misc* news group, and on the VK1 Home Page http://www.vk1.wia.ampr.org

Annual Membership Fees. Full $77.00 Pensioner or student $70.00. Without *Amateur Radio* $48.00

From VK2WI 1.845, 3.595, 7.146*, 10.125, 14.160, 24.950, 28.320, 29.120, 52.120, 52.525, 144.150, 147.000, 438.525, 1281.750 (* morning only) with relays to some of 18.120, 21.170, 584.750 ATV sound. Many country regions relay on 2 m or 70 cm repeaters. Sunday at 1000 and 1930. Highlights included in VK2AWX Newcastle news, Monday 1930 on 3.593 plus 10 m, 2 m, 70 cm, 23 cm. The broadcast text is available on the Internet newsgroup *aus.radio.amateur.misc*, and on packet radio.

Annual Membership Fees. Full $78.00 Pensioner or student $61.00. Without *Amateur Radio* $47.00

VK3BWI broadcasts on the 1st Sunday of the month at 20.00hrs Primary frequencies, 3.615 DSB, 7.085 LSB, and FM(R)s VK3RML 146.700, VK3RMM 147.250, VK3RWG 147.225, and 70 cm FM(R)s VK3ROU 438.225, and VK3RMU 438.075. Major news under call VK3ZWI on Victorian packet BBS and WIA VIC Web Site.

Annual Membership Fees. Full $78.00 Pensioner or student $61.00. Without *Amateur Radio* $47.00

VK4WIA broadcasts on 1.825 MHz SSB, 3.605 MHz SSB, 7.118 MHz SSB, 10.135 MHz SSB, 14.342 MHz SSB, 21.175 MHz SSB, 28.400 MHz SSB, 29.660 MHz FM (rptr), 147.000 MHz, and 438.525 MHz (in the Brisbane region, and on regional VHF/UHF repeaters) at 0900 hrs K every Sunday morning. QNEWS is repeated Monday evenings, at 19.30 hrs K, on 3.605 MHz SSB and 147.000 MHz FM. On Sunday evenings, at 18.45 hrs K on 3.605SSB and 147.000 FM, a repeat of the previous week's edition of QNEWS is broadcast. Broadcast news in text form on packet is available under WIAQ@VKNET. QNEWS Text and real audio files available from the web site

Annual Membership Fees. Full $83.00 Pensioner or student $71.00. Without *Amateur Radio* $52.00

VK5WI: 1827 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.800 FM Mildura, 146.900 FM South East, 146.925 FM Central North, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide. (NT) 3.555 USB, 7.065 USB, 10.125 USB, 146.700 FM, 0900 hrs Sunday. The repeat of the broadcast occurs Monday Nights at 1930hrs on 3585kHz and 146.675 MHz FM. The broadcast is available in 'Realaudio' format from the website at www.sant.wia.org.au Broadcast Page area.

Annual Membership Fees. Full $82.00 Pensioner or student $68.00. Without *Amateur Radio* $54.00

VK6WIA: 146.700 FM(R) Perth at 0930hrs Sunday relayed on 1.865, 3.564, 7.075, 10.125, 14.116, 14.175, 21.185, 29.120 FM, 50.150 and 438.525 MHz, Country relays 3.582, 147.200 (R) Cataby, 147.350 (R) Busselton, 146.900 (R) Mt William (Bunbury).147.000 (R) Katanning and 147.250 (R) Mt Saddleback. Broadcast repeated on 146.700 at 1900 hrs Sunday relayed on 1.865, 3.564 and 438.525 MHz : country relays on 146.900,147.000, 147.200, 147.250 and 147.350 MHz..Also in "Real Audio" format from the VK6 WIA website

Annual Membership Fees. Full $67.00 Pensioner or student $61.00. Without *Amateur Radio* $36.00

VK7WI: 146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.725 (VK7RNE), 146.625 (VK7RMD), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart), repeated Tues 3.590 at 1930 hrs.

Annual Membership Fees. Full $85.00 Pensioner or student $72.00. Without *Amateur Radio* $52.00

VK8 Northern Territory (part of the VK5 Division and relays broadcasts from VK5 as shown, received on 14 or 28 MHz).

VK2 Notes

By Pat Leeper VK2JPA

By the time you read this, the office will have re-opened for business on January 8th 2002. We hope you had an enjoyable holiday season with lots of goodies in your stockings, as well as a recharge for those who have to go back to work.

The Annual General Meeting of the VK2 Division will take place on 13th April 2002, with nominations and agenda items due by 2nd March. Members will be notified by post in the middle of January, just in case they don't pick up on it elsewhere.

Hornsby and District Radio Club, which runs the morse beacon VK2RCW, has requested the Division to take it over as rising costs make it impossible for Hornsby to maintain it. The Council agreed to take the beacon to the Dural site, but it will have to have a call-sign change to VK2RSY along with the other beacons operating from Dural. The move will be made before the licence is due for renewal in February, but no date can be given as yet.

We welcomed eight new members to the VK2 Division at the last Council meeting on 7th December.

Dural fared reasonably well in the storms of early December with no damage to the building but the trees suffered with broken branches, one of which partly demolished the old brick barbecue. Until we get permission from Hornsby Council to remove those branches caught up and to lop some of the trees to make them safe, the area under the trees will be roped off.

The Conference of Clubs was held on 8th December with a smaller than usual attendance. This must be put down to the change of date caused by the federal election as it brought the event too close to the Christmas season. Those attending had a rewarding time with the various discussions brought up by attendees. One important matter brought up was the suggestion that a Voluntary Workers insurance scheme be set up similar to the Affiliated Clubs Public Liability scheme. The Division will need to know how many clubs are interested before we go ahead, and a mailing will be going out to the clubs to see what numbers we can come up with.

The next Conference of Clubs will be held on 11th May 2002.

The VK2 Librarian, Aub VK2AXT, has a project dear to his heart that he needs some help with. He has an AVO Mark 4 valve tester that he wants to set up in the library area so members can come in and test their valves. But it doesn't work and he needs a circuit diagram. Anyone out there help with this?

That's all for this month, see you next time.

VK4 Notes—Qnews

By Alistair Elrick VK4MV

Young Gun

6 year old home-brew?

No not stale beer laying in the corner of the Sunshine Coast Amateur Radio Club rooms, it's the youngest member of SCARC, Joel Falknau who won the junior home brew award for building his own PSK31 kit at the ripe old age of 6! In his presentation to club members up to 70 years his senior, his main claim to fame was "I only burnt my finger once" Hopefully he will become the third generation amateur in the Falknau family.

Cairns AR Club

The Cairns club has their 2 and 70 metre repeaters up and running on Mt. Yarrabah, SE of Cairns. Both repeaters are working well and the club is looking for reports. The 2-metre repeater is linked into the IRLP network with stations from all over Australia and, of course, some International ones heard as well.

Ipswich

Word into the Q recently from Robert Bryce to say the Ipswich Clubs repeater is undergoing tests and they'd like reception reports of their 146.900 MHz repeater. Thanks to the generosity of commercial radio giant, RIVER 949, the Ipswich 146.9 repeater now sits high atop the Rivers Tower at Mt. Kobby.

As an aside Mike VK4XT from Dalby says RIVER 949 is heard at excellent strength out there so no doubt Mike will be trying for the Ipswich Repeater!

Wanted returned.

In the early hours of Sunday 25th thieves broke into the remote transmitter site of Radio 4BH in Brisbane. What was stolen you ask? 22 Satellite dishes being stored there for Radio TAB. These dishes earmarked as replacements for the racing radio's network from Ceduna in VK5 to Townsville in Far North VK4. So if you're at your local pub and a shifty looking character whispers "wanna buy a hot dish"... LET ME KNOW!! Email: 4tabadmin @ 4tab.com.au or telephone Graham Kemp, Acting General Manager, on (07) 3360 1008.

P.S. only the dishes were stolen! Mounting mechanics were left behind.

Radio Scouting JOTA/ JOTI

We had another exciting and successful Jamboree on The Air this year with plenty of overseas contacts being made by Scouts and Guides. It seems that radio contacts were a little higher than previous years.

On behalf of the Youth Members and Leaders of Scouts Australia -

Queensland Branch I would like to thank the Radio Operators that supported and assisted Scout Groups and Districts to participate in JOTA this year. Your support and expertise is greatly appreciated by all participants.

To date - I have just on 950 participants, although we have sold over 1200 badges with more orders coming thick and fast. We were able to allocate 24 Scout callsigns to Scout Groups this year, which is about the same as last year. Townsville, Mackay, Rockhampton, Sunshine Coast and Maryborough all had huge events.

There were plenty of small operations on the Gold Coast and Brisbane. Our biggest success story for the weekend was the JOTA & JOTI Base at Baden Powell Scout Park in Samford, Brisbane with over 200 participants to the weekend camp - VK4SAA made plenty of contacts throughout the weekend with the help of 8 dedicated operators. Lots of Australian and overseas contacts were made and the participants were very interested in talking to Scouts and Guides on the radio. We were visited by the WIAQ with Secretary Bruce Jones seeing our set up on Saturday afternoon and he was able to join in the action, manning a radio for a couple of hours.

While I still have some administrative duties to tidy up for this year's JOTA - Date for next year - the 45th World Scout Jamboree On The Air will be on Saturday and Sunday 19th & 20th October 2002.

During the "off season" more PR & promotions will be happening though Scouts and I am very interested in talking to Amateur Clubs during the New Year.

In January the Australian Rover Moot will be happening on the Sunshine Coast and plans are under way for an Amateur Radio Station to be set up!

Stay tuned to the Q for more as it comes to hand. Again, thank you to those Operators who helped for JOTA 2001 - now onwards to JOTA 2002!

73s from Alistair

VK1 Notes

Forward Bias

Peter Kloppenburg VK1CPK

The scheduled Trash & Treasure sale on November 24, 2001 was very successful. The Farrer compound was chukka full of stalls with something for almost everyone. Almost 50 visitors came to have a look and they were not disappointed. Items for sale included solid state transceivers, antenna couplers (ATU), aluminum chassis, circulators, directional couplers, dummy loads, transistors, integrated circuits (including voltage regulators), VHF and UHF Yagis, 12 volt power supplies, studio microphones, and a whole lot more, at ridiculously low prices. All stallholders agreed that another T & T should be held soon. Maybe April is a good time to hold one, when there is still a bit of sunshine in the air.

Classes for aspirant radio amateurs will start again in the first week of February. On offer will be Novice theory, Regulations, and Morse code at 5 and 10 words per minute. Classes for AOCP theory will be available if at least five applicants sign up for that course. Cost will be minimal; enough to cover basics, and the purchase of textbooks. For those wanting a copy of the updated, but abridged, Amateur Regulations manual send an email to pkloppen@austarmetro.com.au. A course information evening will be held on February 1, 2002. You can also call Gilbert Hughes on 6254 3266 for details.

Marconi Day on 12 December was also very successful. The Division, through Gilbert Hughes (VK1GH), and staff of the Computer Sciences and Engineering School of the University of Canberra put up an antenna farm on top of Building 11, comprising vertical antennas for 10, 15, and 20 metres. The hamshack, right underneath the roof-covered ground mat, was equipped with modern transceivers and operated by Reginald Moger (VK1MV) and William Rawlings (VK1WR); both professional telegraphists. They used a special callsign issued for the occasion (VI1GM). Contacts were made with New Zealanders, Canadians, and U.K. amateurs. Satellite communications, using the School's 4-metre dish antenna, were conducted by Peter Ellis (VK1KEP), who made a significant number of contacts with 70-cm uplink and 2-metre downlink equipment. For visitors to the open day, there were many things to see and hear. Equipment on show was Lasers with long-range distance measurement setups, antique radios from 1914 and 1923 - still working -, and a speech by Peter Jensen (VK2AQJ) about Marconi and his discoveries. The Gallery was hung with metre-square photographs of the various antenna systems that Marconi used in his propagation experiments in 1901, at Poldhu in the U.K.

Don't forget folks, the Annual General Meeting on February 24, 2002 will be preceded by a BBQ starting at 6:00 pm, in the compound of the Parks and Garden Depot in Longerenong St, Farrer.

The next Trash & Treasure sale will be held on Sunday, April 21, 2002 starting at 12:00 midday, also at the compound.

The next general meeting will be held on January 28, 2002 again at the Scout hall in Longerenong St. Farrer at 7.30 for 8.00 pm. Cheers.

By Robin L. Harwood VK7RH

The *Voice of Afghanistan*

The Afghani situation continues to be the focus of shortwave listeners. As I reported in the November 2001 column, the Americans mounted a psychological warfare unit called "Operation Solo", operating from a EC-130 aircraft flying at high altitude in a figure eight pattern. They were reportedly operating several AM and FM senders, after the Taliban transmitting centres in Kabul were taken out in bombing raids. This operation also was easily heard on 8700 kHz USB and was listed as an official frequency, although very few Afghanis possessed receivers equipped with SSB. It could easily have been a Taliban point to point channel for command and control. However we quickly deduced that the SSB transmissions were not coming from an aircraft but from a fixed location, probably from an adjacent CIS nation, such as Turkmenistan.

The Northern Alliance army was supported by heavy American aerial firepower, which decimated the Taliban forces. Thousands of troops defected and surrendered cities such as Kabul, Heart, Mazar-el-sharif although fierce fighting raged around Kandahar and Kunduz. So complete was the downfall that the UN had to hastily organise a roundtable conference in Germany where the various factions could hammer out an interim government. A tentative agreement was reached just as this month's column was being written and a new interim administration in Kabul is to take over from December 22. The agreement also provided for UN troops to be stationed within Afghanistan

The Northern Alliance quickly got transmitters on in Kabul, Herat and Mazar-el-sharif but these were low powered and not easily heard outside these cities.. It is unclear if the interim government will be able to commence broadcasting on shortwave as reports are that all the shortwave transmitting capabilities were completely decimated as a result of the American air raids.

Also at the end of November, a mysterious station emerged signing itself as the "Voice of Afghanistan". This station is on 9950 kHz from 1330 to 1430 UTC with 15 minutes of Pashtoo and 15 minutes of Dari (Persian) with these being repeated in the second half-hour. What was interesting was that this station eventually identified itself as coming from London! The principal backer is *Said Jalal Karim*, who is an Afghan entrepreneur currently operating from there. Yet there is considerable speculation that it may be a front for either the American or British intelligence services as monitors detected a subtle anti-Northern Alliance bias, probably backing one of the other factions.

The station comes in well, being much stronger than the Psyops station on 8700 kHz. The sender is apparently at Samara within Russia, rated at 250 kW, although the studios are in London. So confident were the backers of this operation that they even held a press conference to announce the commencement of the station. The station's postal address is: Afghan Broadcasting Company, 21 Worship Street, London, UK EC2 2DW. It even has an email address of: afgbc9950@hotmail.com They have already replied to some reception reports via email. According to the station's backer, they are hoping to double their operational hours to 2 hours daily as from January 1st and commence as early as 1230.

The 8700 kHz operation may have gone by now due to the altered situation on the ground although the hunt continues for the al-Khayeeda terrorist cells. I have noticed that the signal does vary in signal strength.

Now the focus has turned to the perennial crisis between the Israelis and the Palestinians, following several nasty suicide bombings. Over the past 18 months, relations between the sides rapidly deteriorated following the appointment of Ariel Sharon as Israel's Prime Minister. In the first week of December, Israel had had enough and the Israeli Defence Forces were unleashed to try and force the Palestinians to back down. I have noticed an escalation of the MOSSAD spy numbers signals. Stations such as "Charlie India Oscar" or "Victor Tango Oscar" or derivatives of that are easily heard throughout the HF spectrum, usually on USB with reduced carrier.

The morning news from Jerusalem in English is on daily at 0500 UTC

On 17545 khz directed to Australia and is immediately followed by French,

This is a direct relay from one of the domestic networks.

These domestic networks are also easily heard via their shortwave relays.

They are of course in Hebrew and are on

0430-0600 15640
0500-1900 15760
0800-1900 17535
1700-0430 11585
1900-0500 9345
1900-1950 15640
1900-2300 9390
2100-2215 15640
2300-0600 7545.

Also Israel broadcasts in Arabic via shortwave on the following channels and again is a relay of their domestic service. It is carried 0400-2215 on 5915 9815 and 12145 kHz. The Palestinian Authority was given a MW channel plus several FM frequencies but no HF allocations. This has not prevented them from using shortwave frequencies from other sympathetic Arab neighbours.

As some of you may be aware, I recently moved into a retirement complex and now have a very temporary antenna sitting along the curtain rail for about 8 meters and only two meters high. Don't knock it as it does work although not as good if it is was outside and much higher. This will happen shortly. Alas my transmitting days could be over as it is virtually impossible to operate except perhaps on low power via the local repeater. This is frustrating but I am determined to listen in.

Well that is all for now. Don't forget you can email me at vk7rh@wia.org.au.

73 de VK7RH

AMSAT

Bill Magnusson VK3JT

Six-monthly update of operational amateur radio satellites

This information is compiled from many sources including personal observations of my own and my friends. The information is as current as I can obtain at the time of writing. It relies heavily on the day-to-day happenings on the AMSAT-NA email bulletin board and by listening to and operating the satellites themselves.

AO-40

Launched: November 16, 2000 aboard an Ariane 5 launcher from Kourou, French Guiana.

Status: Currently, the U/L-1 to S-2 passband is active.

Uplink	U-band	435.550-435.800 MHz	CW/SSB
	L1-band	1269.250-1269.500 MHz	CW/SSB
	L2-band	1268.325-1268.575 MHz	CW/SSB
Downlink	S2-band	2401.225-2401.475 MHz	CW/SSB

AO-40 will be experiencing eclipses and other problems associated with sun-angle right through until April 2002. Some of these will render communications impossible and therefore the control stations may switch off all transponder operations on odd occasions. These periods will be kept to a minimum and as the sun-angle improves active periods will become longer.

There still remain a number of very important operations yet to take place in the commissioning of AO-40. The two most imortant for the long-term viability of AO-40 are, the unfurling of the solar cell panels and the switch to 3-axis stabilisation (permanent earth-pointing attitude). As a precursor to carrying out these operations, the control stations are using the eclipse time to manipulate the attitude of AO-40. It will be made to drift from its present value through 180,0 and back again to 0,0 during the eclipse period. In doing so it will pass through periods of very poor squint angles and during those periods the transponders may as well be turned off. When this critical period is over and full power is again available, it will be time to continue the tests on the 3-axis stabilisation system. If it all works properly the solar cells will be unfurled to allow for continuous operation.

There is no firm timetable for these events but they are expected to be undertaken soon after the eclipse period ends in April 2002. The unfurling of the solar array is a "one-off" operation. It cannot be reversed. If successful it will then allow the deployment of the HF antenna which until that time will remain coiled up inside the space-frame behind the solar array panels. Once the HF antenna is deployed, the 10 and 15 metre receivers can then be turned on and tested. They can be linked to the S-band or K-band downlinks.

The latest news on AO-40 happenings is always available on the AMSAT-NA bulletin board. Please be patient. These are delicate, critical operations and the control stations are doing their best to give us a bird which is in the best possible condition for as long into the future as possible. In the meantime, reports are coming to hand daily of excellent operating conditions on mode U/L-S. Strong signals and wide footprints are the order of the day despite the less than optimum squint angles. If all goes well with the 3-axis stabilisation and the solar array unfurling we should have a truly marvellous communication satellite with narrow and wide angle camera operations, RUDAK digital mailbox, 24GHz and laser experimental comms packages and perhaps even two HF uplinks on 21 MHz and 28 MHz. Enough to keep us all happy for some time to come.

International Space Station (ISS)

Worldwide packet uplink: 145.990 MHz
Region 1 voice uplink: 145.200 MHz
Region 2/3 voice uplink: 144.490 MHz
Worldwide downlink: 145.800 MHz
TNC callsign: NO CALL

The initial amateur radio station equipment was delivered to the ISS in September 2000 aboard shuttle Atlantis. ARISS (the organisation) is made up of delegates from major national Amateur Radio bodies, including AMSAT. The ISS packet station is normally available for UI packets. It is therefore possible to digipeat your position packets through it using APRS or UIview (type) software. The mailbox and keyboard

The AMSAT group in Australia

The National Co-ordinator of AMSAT-VK is Graham Ratcliff VK5AGR. No formal application is necessary for membership and no membership fees apply. Graham maintains an email mailing list for breaking news and such things as software releases. Members use the AMSAT-Australia HF net as a forum.

AMSAT-Australia HF net

The net meets formally on the second Sunday evening of the month. In winter (end of March until the end of October) the net meets on 3.685 MHz at 1000UTC with early check-ins at 0945UTC. In summer (end of October until end of March) the net meets on 7.068 MHz at 0900UTC with early check-ins at 0845UTC. All communication regarding AMSAT-Australia matters can be addressed to:

AMSAT-VK,
GPO Box 2141,
Adelaide, SA. 5001.

Graham's email address is:
vk5agr@amsat.org

are currently disabled. You are advised to visit the packet section of the ARISS web page before attempting to first work ISS on packet. The ISS crew members are very busy. They have a demanding daily schedule. The daily crew schedule (which gives an idea when crew members have free time and may be available for Amateur Radio operations) can be found at: http://spaceflight.nasa.gov/station/timelines/2001/may/index.html. When the crew members are operating the amateur radio station, they will use the following callsigns:

U.S. callsign: NA1SS
Russian callsigns: RS0ISS, RZ3DZR

RS-12

Uplink 145.910 to 145.950 MHz CW/SSB
Downlink 29.410 to 29.450 MHz CW/SSB
Beacon 29.408 MHz
Launched: February 5, 1991 aboard a Russian Cosmos C launcher. Status: RS-12 was re-activated in mode-A on January 1, 2001The latest information on RS-12 and RS-13 can be found on the AC5DK RS-12/13 Satellite Operators page at: http://www.qsl.net/ac5dk/rs1213/rs1213.html.

RS-15

Uplink 145.858 to 145.898 MHz CW/SSB
Downlink 29.354 to 29.394 MHz CW/SSB
Beacon 29.352 MHz (intermittent)
SSB meeting frequency 29.380 MHz (unofficial)
Launched: December 26, 1994 from the Baikonur Cosmodrome. Status: Semi-operational, mode-A, using a 2-metre uplink and a 10-metre downlink. Dave, WB6LLO, has operating information for RS-15 on his web site. In addition to satellite data, antenna information for mode-A operation is also featured. The WB6LLO web site URL is: http://home.san.rr.com/doguimont/uploads.

AO-10

Uplink 435.030 to 435.180 MHz CW/LSB
Downlink 145.975 to 145.825 MHz CW/USB
Beacon 145.810 MHz (unmodulated carrier)
Launched: June 16, 1983 by an Ariane launcher from Kourou, French Guiana.
Status: Semi-operational, mode-B. AO-10 has been locked into a 70-cm uplink and a 2-metre downlink for several years. AO-10 has been undergoing something of a 're-discovery' since the launch of AO-40 which has attracted a lot more interest in the high orbit birds. Hardly a day goes by without reports of good international contacts being made. Remember however to listen to the beacon regularly during an operating session and cease transmission if the beacon is FM-ing. This is standard procedure on AO-10. Stacey Mills maintains a web site for AO-10.
Visit http://www.cstone.net/~w4sm/AO-10.html for the latest information.

UO-14

Uplink 145.975 MHz FM
Downlink 435.070 MHz FM
Launched: January 22, 1990 by an Ariane launcher from Kourou, French Guiana.
Status: Operational, mode J

FO-20

Uplink 145.90 to 146.00 MHz CW/LSB
Downlink 435.80 to 435.90 MHz CW/USB
Launched: February 07, 1990 by an H1 launcher from the Tanegashima Space Center in Japan. Status: Operational. FO-20 is in mode JA.

FO-29

Launched: August 17, 1996, by an H-2 launcher from the Tanegashima Space Center in Japan.
Status: Operational
Voice/CW Mode JA
Uplink 145.90 to 146.00 MHz CW/LSB
Downlink 435.80 to 435.90 MHz CW/USB
Digital Mode JD
Uplink 145.850 145.870 145.910 MHz FM
Downlink 435.910 MHz 1200-baud BPSK or 9600-baud FSK
Callsign 8J1JCS
Digitalker 435.910 MHz
FO-29 has been switched into mode JA for the latter part of 2001. No further scheduling was available at the time of writing.

PCSat

Uplink/downlink 145.830 MHz 1200 baud AX-25 AFSK via PCSAT-1
Uplink 435.250 MHz 9600 baud via PCSAT-2
APRS Downlink 144.390 MHz (Region 2)
Launched: September 30, 2001 aboard an Athena-1 rocket from the Kodiak Alaska Launch Complex.
Status: Operational but experiencing difficulties due to long solar eclipses. At the time of writing, PCsat is in trouble due to long eclipse periods each day. For some unknown reason it seems to be resetting itself to high power mode towards the end of almost every period of eclipse. This situation is potentially critical and could result in premature battery failure. The satellite may not survive until the sun-angles improve but in an endeavor to recover it, a number of control stations have been set up around the globe. These stations are resetting PCsat when it is observed to be switched back into high power mode. It is hoped that in this way it can be coaxed along to survive the eclipse period but time will tell. In the meantime digipeating and most other operations have been turned off to conserve battery power. You can watch the telemetry yourself to see first hand what is the situation. Each telemetry string consists of a number of fields separated by commas. Towards the end of each telemetry string is a series of 8 digits which are usually either all 1s (,11111111,) indicating high power mode or 00111111, indicating low power mode, the first two digits being the critical ones. On the last two passes which I monitored prior to submitting this column, the reset had been successful for a couple of orbits without intervention but some garbage characters have been noticed in the TLM string on the last pass and this is NOT a good sign. Keep your fingers crossed. Bob Bruninga was anxious to keep the bird operational so it could be activated during the Marconi-day celebrations.

TIUNGSAT-1

Uplink 145.850 or 145.925 MHz 9600-baud FSK
Downlink 437.325 MHz 38400-baud FSK
Broadcast callsign MYSAT3-11
BBS MYSAT3-12
Launched: September 26, 2000 aboard a converted Soviet ballistic missile from the Baikonur Cosmodrome.
Status: Operational at 38k4-baud FSK. The power budget will not allow continuous operation. It may be turned off when it comes into range. Ground station software is therefore needed to allow operators to command the satellite transmitter to switch on. Data recovery rates are very high on Tiungsat-1. The dynamic efficiency sits around 100% for most of each pass. Downloads of well over 2 megabytes and nudging 3 megabytes per pass are common. Tiungsat-1 is a prime example of just how well a digital satellite can perform. The latest round of high resolution images contained a number from our neck-of-the-woods.

UO-22

Uplink 145.900 or 145.975 MHz FM 9600-baud FSK
Downlink 435.120 MHz FM
Broadcast Callsign UOSAT5-11
BBS UOSAT5-12
Launched: July 17, 1991 by an Ariane launcher from Kourou, French Guiana.
Status: Operational. More than 10 years on and once again the "old reliable" UO-22 is being called upon to carry more than its allotted load. KO-23 is unlikely to return to service and KO-25 is suffering from very poor download efficiencies.

Together with the normal packet radio "satgate" traffic, UO-22 appears to be coping very well. The store-and-forward BBS is always busy and download efficiency runs around 100% for most of each pass. My station automatically checks out UO-22 each day. It keeps my computer clock accurate and updates my tracking programs with fresh keplerian elements every few days.

What would we do without good old UO-22? A big thank you to Chris and the team at UoS who somehow magically keep her in 'apple-pie' order.

UO-11

Downlink 145.825 MHz FM (1200-baud AFSK)
Mode-S Beacon 2401.500 MHz
Launched: March 1, 1984 by a Delta-Thor rocket from Vandenberg Air Force Base in California.
Status: Operational and still performing its educational functions perfectly after almost 17 years in space. Signals from this old-timer are still sufficient for even modest receiving stations to extract useful data from its telemetry broadcasts.This satellite is worth the effort, even if only for old times sake. It gives a glimpse of the forward thinking that went into its design at Surrey University in 1983 during the early, heady days of the amateur/academic organisation that preceded SSTL. More information on OSCAR-11 is available at G3CWV, Clive Wallis' very informative site, http://www.users.zetnet.co.uk/clivew/. Oscar-11's reliable 2.4 GHz beacon is still being used as a 'yard-stick' for testing state-of-the-art microwave downlink systems being setup for AO-40 ground stations. This aging satellite is thus linking two eras in Amateur Radio Satellite technology.

AO-16

Uplink 145.90 145.92 145.94 145.96 MHz FM (using1200-baud Manchester FSK)
Downlink 437.025 MHz SSB (RC-BPSK 1200-baud PSK)
Mode-S Beacon 2401.1428 MHz
Broadcast Callsign: PACSAT-11
BBS PACSAT-12
Launched: January 22, 1990 by an Ariane launcher from Kourou, French Guiana.
Status: Semi-operational, the digipeater command is on and is in use mainly by APRS stations for automated position reporting.

IO-26

Uplink 145.875 145.900 145.925 145.950 MHz FM (1200-baud)
Downlink 435.822 MHz SSB
Broadcast Callsign ITMSAT-11
BBS ITMSAT-12
Launched: September 26, 1993 by an Ariane launcher from Kourou, French Guiana.
Status: Semi-operational, the digipeater function is on and open for APRS/ UIview users.

KO-25

Uplink 145.980 MHz FM (9600-baud FSK)
Downlink 436.500 MHz FM
Broadcast Callsign HL02-11
BBS HL02-12
Launched: September 26, 1993 by an Ariane launcher from Kourou, French Guiana.
Status: Semi-operational with very low dowlink efficiency. I have been trying to download the same file since October 2001 with very little (if anything) being downloaded each pass. I have seen no explanation of why this is so. Keep the fingers crossed on this one.

UO-36

Uplink 145.960 MHz (9600-baud FSK)
Downlink 437.025 MHz 437.400 MHz (38k4-baud FSK)
Broadcast Callsign UO121-11
BBS UO121-12
Launched: April 21, 1999 by a Russian launcher from the Baikonur Cosmodrome.
Status: Unknown, with very little activity heard for some months now but it's still on the 'active' list. Hopefully this excellent bird will be recovered from whatever ails it at present. Its often stunning picture quality was the best of any of the imaging birds. Like Tiungsat-1, it too requires the ground station to have the ability to turn on the satellite transmitter when it comes into range. The same software does the job for both satellites.

Starshine3 and Sapphire

Both these satellites were launched in cluster with PCsat. They are both reported as having beacons in the 2-metre amateur radio band. So far, I have heard neither, but early reports indicated activity from both these birds. Starshine3 is designed to be visible to the un-aided eye when in sunlight and the project is directed towards school children all over the world, many of whom were involved in aspects of its construction (mirror polishing etc.). It is a 1 metre sphere, covered in small circular mirrors which reflect the

sunlight as Starshine rotates. Despite many attempts to see this satellite, neither I nor any of my satellite-watching friends have been successful to date. We'd really like to hear from anyone who has actually seen Starshine3.

That concludes the list of operational amateur radio satellites at the end of 2001. You will notice one or two missing from last year's list. Like all good things, amateur radio satellites do come to an end. Sadly some never even see the 'light-of-day' so to speak despite the best of efforts by their designer/builders. We do owe these people a debt of gratitude and we would all be the losers were it not for their tireless efforts. Bob and the team at the US Naval Academy recently spent a 36-hour, sleepless period trying to recover PCsat from the eclipses. That is not all that unusual. The AO-40 control team has been doing such things off and on for the first year of AO-40's life. New plans are always on the drawing board, new satellites are always being dreamed-up. Watch the AMSAT bulletin board at www.amsat.org for the latest information. Come and take part. Contribute your ideas. The planners are out there watching and you can bet they will pick up any ideas worthy of inclusion. Watch this space in 2002 for news of "Project-JJ".

I hope you have all survived the ever-more-hectic festive season and are ready for the fray in 2002....

Bill, VK3JT

Club News

Central Coast Amateur Radio Club Field Day

The Central Coast Amateur Radio Club Hosts the Southern Hemisphere's Largest Amateur Radio and Communications Show

On Sunday 24th February 2002 the Central Coast is host to the largest gathering of Radio Amateurs, Radio Communications Enthusiasts, Computer and Electronic Hobbyists in the Southern Hemisphere. More than 2000 people from 40 clubs and organisation from all over Australia and the Pacific will converge on Wyong Racecourse to display and trade the latest radio communications equipment. Exhibits and operating displays will show and demonstrate:

- All facets of Amateur Radio
- CB Radio
- Shortwave Listening and Scanning
- Packet Radio - Computerised Communications
- Television and Multimedia transmission and reception demonstrations
- Interesting technical lectures, seminars and workshops
- Electronic construction
- Exhibits of Vintage and Historical Radio collecting and restoration
- Volunteer Emergency Communications
- Satellite Reception
- Hobby computing
- Internet communications
- Radio Fox Hunting
- Truckloads of pre-loved equipment at give away prices in the flea market and disposals areas.
- See all major Radio and electronics equipment suppliers together under one roof with many dealers showing the latest offerings and great bargains

Throughout the day there will be several seminar sessions and workshops on topical subjects, with presentations from experts and equipment suppliers, including talks on the latest technology.

Plenty of off street parking is available within Wyong Racecourse grounds. Tea, coffee and biscuits will be available from 8.30 am to 3.00 p.m. at no charge in the Dining Room. Hot and cold food can also be purchased within Wyong Racecourse.

Anyone with an interest in radio communications or electronics can contact the event organisers, The Central Coast Amateur Radio Club, by phoning 02 43402500 for more information. There is an extensive and informative web site covering the Field Day at www.ccarc.org.au .

Gates to the Racecourse will be open to the public from 8.30am Entrance fee: Adults $10.00, Seniors Card, pensioner concession, students $5.00, Children under 12 free.

The Central Coast Amateur Radio Club presents

Central Coast Field Day

for

RADIO AMATEURS AND ENTHUSIASTS, COMPUTER AND ELECTRONIC HOBBYISTS

Sunday 24th February, 2002

Gates Open 8.30 am

DON'T MISS THE BIGGEST FIELD DAY AND HAMFEST IN THE SOUTHERN HEMISPHERE

For further information write to The CCARC, PO Box 346, Woy Woy, 2256 NSW
Phone 02 4340 2500, Web www.ccarc.org.au, Email vk2afy@hotmail.com

Beyond Our Shores

David A. Pilley VK2AYD
davpil@midcoast.com.au

This month most of the reports are from QNEWS, which is broadcast from VK4 every Sunday and Monday.

Interesting Statistics

USKA (Swiss Union of Short Wave Amateurs) recently printed a breakdown in their magazine "Old Man", of Radio Amateurs around the world. The total was shown as 2,986,722 with Japan heading the list with 1,296,056. The growth seemed to be more in the third world countries. The breakdown also showed the percentage of Amateurs who were members of their respective national societies. Iceland topped the list at 95% but then there are not too many Amateurs there! Finland was high with 87%. Australia was shown as 30%. There was also a breakdown showing the Amateur population compared with the national population and you can imagine, Japan topped out again with 10.3%. Australia was 0.84%. It also went on to show Amateurs per 100 km^2, but that's not a fair analysis for VK.

(from Hans VK4/HE9RFF)

Russia sees RED on Non-CW Licences

The Russian Federation supports the retention of mandatory Morse code licence tests for the Amateur Service according to a packet bulletin from VK3ZWI.

The Russian Federation also advocates the retention of ITU RR S25.3 that prohibits third party traffic out of concern of commercialisation of the Amateur Service, and it does not fully agree with a proposed change to S19 intended to give more flexibility in the formation of amateur call-signs.

(QNEWS 20/10)

New York City Television Seeks New Home

November: Seven weeks after a terrorist attack caused the collapse of the World Trade Centre, hundreds of thousands of homes in the New York City area remain unable to receive more than four television stations.

Because the main antennas atop the north tower came down, all the local stations, except Channels 2 and 41, which had backup antennas on the Empire State Building, had lost a significant part of their audiences.

WNBC-TV channel 4 which in the late 1940's was the first to broadcast from the Empire State Building made a triumphant return when it flipped the switch on its new Empire located transmitter.

The Empire State Building was the home to almost all New York City television broadcasters before the World Trade Centre was built.

(ARNewsline(tm) from various published news reports.)

W1AW

Maxim Memorial Station W1AW has made some hardware changes to its 40-metre bulletin/code practice transmitter and now is seeking signal reports.

Reports should note location, time of reception, mode, signal strength and quality. Use of the standard RST system is acceptable.

Mail reports on a postcard to W1AW 40-metre reports, 225 Main St, Newington, CT 06111. E-mail reports may be sent to w1aw@arrl.org.

W1AW's schedule calls for Morse practice Tuesdays through Fridays, 14:00Z and Morse practice/bulletins Mondays through Fridays 21:00-23:00Z, both on 7047.5 kHz. The weekday digital transmission begins at 23:00Z on 7095 kHz. A phone bulletin is transmitted daily at 01.45Z on 7290 kHz.

The complete W1AW operating schedule is on the ARRL Web site: http://www.arrl.org/w1aw.html.

Final Frontier

SpaceDaily reports a new survey by the Teal Group has identified some 600 active satellites in Earth orbit or in deep space. The survey factored in all satellites launched since 1980, and, after a process of elimination, arrived at an estimate of 600 to 610 for satellites that remain active today. (We'll soon have a super reflector up there!)

(AMSAT-NA via ARNewsLine)

ISS DXCC?

The International Space Station Expedition 4, crew of Commander Yuri Onufrienko, Flight Engineers Dan Bursch, KC5PNU and Carl Walz, KC5TIE, were launched aboard the shuttle Endeavour November 29. In addition to a new crew, new Amateur Radio antennas are manifested aboard the shuttle for transport to the ISS. The new antennas will be installed around the perimeter of the Service Module, allowing future operation from HF to microwave frequencies. The HF antenna is made up of a flexible tape that will work on 10-metres—and possibly 15 and 20 metres.

The ISS is on orbit at an average altitude of 395 kilometres above Earth.

For more information about the ISS, visit NASA's Human Space Flight Web site, http://spaceflight.nasa.gov/.

(NASA via AMSAT News service)

Emergency Comms

Watching CNN News on TV, my ears pricked up when the announcer said the only communications from many of the islands struck by Hurricane Michelle was by amateur radio.

Hurricane Michelle, boasting winds of up to 216 km/h, swept across Cuba and the Bahamas November 3-5. The Hurricane Watch Net and W4EHW at the National Hurricane Centre in Miami teamed up to provide forecasters with real-time surface reports. Amateur radio also was used for the first time to communicate directly with a hurricane hunter aircraft as it was in the eye of a hurricane over land.

A few months back astronauts on the ISS were asked by school students how they would communicate should the power fail and they responded "By Amateur Radio". Perhaps that's the reason why most astronauts are radio amateurs!

Is your hand-held charged–jic?

(arrl letter)

Afghanistan

I wonder how many readers have at last had a QSO with that most wanted DXCC country?

ARRL approves Afghanistan operation

for DXCC: The ARRL DXCC Desk reports it has received acceptable documentation for YA5T in Afghanistan and has approved it for DXCC credit. Afghanistan is among the top 10 "most wanted" countries. The license, which authorizes operation on all bands—including 6 metres—was issued by the Islamic Republic of Afghanistan government that's still recognized by the United Nations. YA5T will be operated by Peter Casier, ON6TT, as well as by Mats Persson, SM7PKK, Robert Kasca, S53R, and Mark Demeuleneere, ON4WW. All work for the UN World Food Program. YA5T will be on the air as their schedules permit. The DXCC documentation is for contacts made on or after November 20, 2001. No other call signs or operations have been approved. For more information, visit the YA5T Web site managed by Bruce Richards, WD4NGB http://www.qsl.net/ya5t/.

(ARRL Nov 30 N/L)

G3AQC's signal spans the Atlantic on 73 kHz!

Low-frequency experimenter Lawrence "Laurie" Mayhead, G3AQC, has added another LF accomplishment to his list—transatlantic reception of his 73 kHz signal. Word of the LF exploit came just weeks before the centennial of the historic transatlantic transmission of December 12, 1901, when Guglielmo Marconi, in Newfoundland, received the letter "S" transmitted from England.

Laurie, operating on 72.401 kHz was received in the U.S. by John Andrews, W1TAG.

He was using dual-frequency CW (known as DFCQ) featuring elements that are 2 minutes long. Andrew detected his signal using ARGO DSP software.

Figured by grid squares, the distance between G3AQC and W1TAG was 3275 miles (5270 km).

Andrews said he lives in a residential area that's not known for being especially "quiet," so he's puzzled that he's apparently the only US station to hear the 73-kHz transmissions from the UK.

Last February, Mayhead and Larry Kayser, VA3LK, in Ontario, completed a transatlantic Amateur Radio contact on 136 kHz. The UK's 73-kHz band is a 2.8 kHz sliver of spectrum, from 71.6 to 74.4 kHz.

The *ARRL has petitioned the FCC to create two low-frequency Amateur Radio allocations—at 136 kHz and at 160-190 kHz. FCC action is anticipated in 2002.*

(ARRL Nov 30 N/L)

On the lighter side

Two letters in the December RSGB RadCom caught my eye.

G3GTF had noticed that in a picture on the cover of the September RadCom, 80% of the people featured were wearing spectacles. (The picture was of a group of Amateurs taking part in a Morse Campaign, all with telegraphy keys at their fingertips). G3GTF is a Morse aficionado and also wears spectacles.

Question: Is Morse bad for the eyesight?!

The next letter was from G0LYY was not surprised at the lack of success the experiments using trees as antennas had produced. He fell to wondering how many experiments had been done with the traditional 'wet string'? (It's very easily portable).

Questions: Does a length of wet string stay wet with RF running through it?

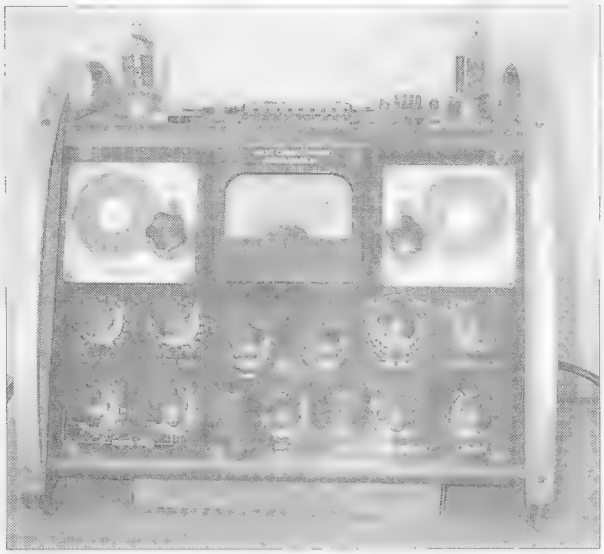
Does it work better in rain or sunshine?

So what have you been experimenting with lately...?

Wishing you happy hamming in 2002.

AVO Mk 4 circuit diagram wanted

The VK2 Librarian, Aub VK2AXT, has a project dear to his heart that he needs some help with. He has an AVO Mark 4 valve tester that he wants to set up in the library area so members can come in and test their valves. But it doesn't work and he needs a circuit diagram. Anyone out there help with this?



Contact Aub via the divisional office.

Calibrating

Tune: Home on the Range

Oh give me an ohm, where the amperes roam,
Where the volts and the decibels play.
Where the rocks that you see,
Are all called BC3,
With their frequencies put there to stay.

Chorus:

Ohm, ohm in my cage,
It was there that I first learned to pray,
When each LD2 was blown neatly through,
And the quartz was all cloudy all day.

discovered b Colin Consiglio - SWL WIA - L30371 on http://www.bliley.net/XTAL/History.html

Contests

Ian Godsil VK3VP
contests@wia.org.au

Contest Calendar January-March 2002

Jan	5-6	ARRL RTTY Roundup		
Jan	12-13	Summer VHF Field Day		(Dec 01)
Jan	11-13	Japan Intl DX Contest 160m-40m	(CW)	(Dec 01)
Jan	20	HA DX Contest	(CW)	
Jan	25-27	CQ 160 Metres Contest	(CW)	
Jan	26-27	REF Contest		
Feb	2-3	Ten-Ten Intl. QSO Party	(SSB)	
Feb	9-10	WW RTTY WPX Contest	(RTTY)	
Feb	9	Asia-Pacific Sprint	(CW)	
Feb	9-10	PACC Contest	(CW/SSB)	
Feb	16-17	ARRL Intl. DX Contest	(CW)	
Feb	22-24	CQ 160 Metres Contest	(SSB)	
Feb	23-24	REF DX Contest	(SSB)	
Feb	23-24	RSGB 7MHz DX Contest	(CW)	
Feb	24	High Speed Club CW Contests		
Mar	2/3	ARRL Intl. DX Contest	(SSB)	
Mar	9/10	RSGB Commonwealth Contest		(Jan 02)
Mar	9/10	WWL DX Contest	(CW/SSB)	
Mar	16/17	John Moyle Field Day		
Mar	16/17	Bermuda Contest	(CW/SSB)	
Mar	16/17	DARC SSTV Contest		
Mar	16/17	Russian DX Contest	(CW/SSB)	
Mar	23/24	CQ WW WPX Contest	(SSB)	

A VERY HAPPY NEW YEAR to you all and I hope that it will be a pleasant one with not too many worries.

Please notice that I write "pleasant" and not "good", for the simple reason that very few of us are not caught up in some way with the stresses and strains of our community — notably increased working hours for those who have jobs and increased costs for all of us. There isn't a Club or specific-interest group today that is not desperate for a dollar, and that includes the WIA and your local Radio Club.

If things continue as they have been last year, there will be clubs that will close for lack of continued support.

Future of VK Contests

Whilst this column cannot proffer solutions to the economic ills of Society, I do wonder if something like this may happen to our local contests.

Those of you who seriously support our VK contests will know that there has been falling participation in several events over some years and some contests have now gone. I am pleased to report that this does NOT apply to the revamped Oceania DX Contest, of which I hope to have details in a few months.

The smaller events also need your support — the Ross Hull and VHF Field Day this month; John Moyle F/D in March; VK-Tasman in June. I have made a separate list of this year's events and I ask you all to put these dates into your diaries NOW, with a note to take part.

The RD will always be the "popular" contest, but even it seems to show signs of falling participation in some sections. Is this so? I hope not. (See results below to form your own opinion.)

Sometimes things become static, so perhaps you can think of ways to spark up our VK contests. If so, PLEASE let me have your ideas, preferably in writing via e-mail to the address above, or by postal mail to 57 Nepean Highway, Aspendale, 3195. I can think of a few things, but there must be other ways that you can see to improve things — changes to rules, scoring systems, etc.

As with the future of the WIA, if we don't *ALL* work together the activities will disappear. This would not only be a shame, but also show us in Australia as running contrary to the trends in New Zealand, America and Europe, where contest participation is increasing each year.

I really look forward to any serious contributions from you. Meanwhile, good luck in the VHF contests this month.

73, Ian Godsil VK3VP

Australian Contests 2002

(Dates to be finally confirmed, but should be correct. Please note these and aim to participate this year.)

to 13	Jan	Ross Hull VHF	20	July	Pacific 160 Metres
12/13	Jan	VHF Field Day	17/18	Aug	RD
16/17	March	John Moyle Field Day	24/25	Aug	Alara
25	April	Harry Angel Sprint	5/6	Oct	Oceania DX
1	June	VK/Tasman	12/13	Oct	Oceania DX
8	June	QRP Day	9	Nov	VHF Field Day
15/16	June	Novice	26	Dec	Ross Hull VHF

65th Commonwealth Contest 2002 Rules

NOTE RULE CHANGES

1. START TIME will be 1000 UTC on 9th March 2002 and FINISH is 1000 UTC on 10th March 2002
2. In Restricted Section the requirement of at least 4 hours operation after 0001 on the second day is removed.
3. Ducie Island, VP6, is added to the call area list.
4. As this is the Golden Jubilee year for HM The Queen, a special certificate will be awarded to any entrant making contact with more than 50 band-call areas.

RULES

The Commonwealth Contest promotes contacts between stations in the Commonwealth and Mandated Territories. See table for qualifying Call Areas. A more relaxed contest environment which gives you the opportunity to work some choice DX. These rules should be read in conjunction with RSGB General Rules in the RSGB Contesting Guide 2002.

Date: 9/10 March 2002
Time: 1000 to 1000
Bands: All HF (no WARC)
MODE: CW

EXCHANGE: RST + Serial number

1. Eligible entrants: UK entrants must be members of RSGB. Overseas-Licensed Radio Amateurs within the Commonwealth or British Mandated Territories. Single-operator. Entrants may not receive any assistance during the contest, including the use of spotting nets, packet clusters or other assistance in finding new bonuses. 'Headquarters stations', GB or other UK special event callsigns and maritime or aeronautical mobile are not eligible. Entries from 'Commonwealth Society Headquarters stations' are welcome and will be scored and shown separately in the results.
2. **Sections:** (a) Open, no limit on operating time. (b) Restricted, operation is limited to 12 hours. Off periods must be clearly marked and a minimum of 60 minutes in length.
3. **Frequencies:** Entrants should operate in the lower 30kHz of each band, except when contacting Novice stations operating above 21030 and 28030kHz.
4. **Scoring:** Contacts may be made with any station using a Commonwealth Call Area prefix except those within the entrants own Call Area. Note that for this contest, the entire UK counts as ONE call area, and therefore UK stations may not work each other for points. Each contact scores 5 points, with a bonus of 20 points for each of the first three contacts with each Commonwealth Call Area, on each band.
5. **"Headquarters" Stations:** A number of Commonwealth Society HQ stations are expected to be active during the contest and will send 'HQ' after their serial number, to identify themselves. Every HQ station counts as an additional call area and entrants may contact their own HQ station for points and bonuses.

   Entries from Headquarters stations are welcome and will be scored and shown separately in the results.
6. **Logs:** Separate logs and lists of bonuses claimed are required for each band. Entries must be accompanied by a summary sheet indicating the section entered and the scores claimed on each band.
7. **Address for logs:** RSGB HF Contests Committee, c/o S.V.KNOWLES G3UFY, 77 Bensham Manor Road, Thornton Heath, Surrey, CR7 7AF, UK
8. **Closing Date for Logs:** Logs must be postmarked no later than 7 April, 2002.
9. **Awards:**
   (a) Open-The Senior Rose Bowl will be awarded to the overall leader. The Col. Thomas Rose Bowl will be awarded to the highest-placed UK station. Certificates of Merit will be awarded to the leading three entrants overall and to the leading stations in each Call Area.
   (b) Restricted-The Junior Rose Bowl will be awarded to the leading station. Certificates of Merit will be awarded to the leading three entrants overall and to the leading stations in each Call Area.
   (c) A Commonwealth Medal will be awarded to the entrant in either section who in the opinion of the HF Contest Committee has most improved his or her score, or contributed significantly to the contest over the years.
   (d) A Special Golden Jubilee Certificate will be awarded to every entrant in either section who makes contact with more than 50 Band-Call Areas in the 2002 contest.

   For example; VP9 worked on 3 different bands counts as 3 Band-Call Areas. Entrants are asked to note their claimed Band-Call Area total on the Summary Sheet.

Commonwealth Call Areas List

(Revised 14 November 2002)
3B6 Agalega and St. Brandon
3B8 Mauritius
3B9 Rodriguez Island
3D2 Fiji
3D2 Rotuma
3D2 Conway Reef
3DA Swaziland
4S Sri Lanka
5B Cyprus
5H Tanzania
5N Nigeria
5W Western Samoa
5X Uganda
5Z Kenya
6Y Jamaica
7P Lesotho
7Q Malawi
8P Barbados
8Q Maldive Islands
8R Guyana
9G Ghana
9H Malta
9J Zambia
9L Sierra Leone
9M0 Spratly Island
9M2 W. Malaysia
9M6/8 E. Malaysia
9V Singapore
9Y Trinidad and Tobago
A2 Botswana
A3 Kingdom of Tonga
AP Pakistan
C2 Nauru
C5 Gambia
C6 Bahamas
C9 Mozambique
CY0 Sable Island
CY9 St. Paul Island
G,GB,GD,GI,GJ,GM,GU,GW United Kingdom (all one area)
H44 Solomon Islands
H40 Tamotu
J3 Grenada
J6 St. Lucia
J7 Dominica
J8 Saint Vincent
P2 Papua New Guinea
S2 Bangladesh
S7 Seychelles
T2 Tuvalu
T30 W. Kiribati
T31 C. Kiribati
T32 E. Kiribati
T33 Banaba
TJ Cameroons
V2 Antigua, Barbuda
V3 Belize
V4 St. Kitts Nevis
V5 Namibia
V8 Brunei
VE1 Nova Scotia
VE2 Quebec
VE3 Ontario
VE4 Manitoba
VE5 Saskatchewan
VE6 Alberta
VE7 British Columbia
VE8 North West Territories
VE9 New Brunswick
VK0 Heard Island
VK0 Macquarie Island
VK1 Australian Capital Terr
VK2 New South Wales
VK3 Victoria
VK4 Queensland
VK5 South Australia
VK6 Western Australia
VK7 Tasmania
VK8 Northern Territory
VK9C Cocos (Keeling) Island
VK9L Lord Howe Island
VK9M Mellish Reef
VK9N Norfolk Island
VK9W Willis Island
VK9X Christmas Island
VO1 Newfoundland
VO2 Labrador
VP2E Anguilla
VP2M Montserrat
VP2V British Virgin Islands
VP5 Turks and Caicos Islands
VP6 Pitcairn Island
VP6 Ducie Island
VP8 Antarctica
VP8 Falkland Islands
VP8 South Georgia
VP8 South Sandwich
VP8 South Shetland
VP8 South Orkney
VP9 Bermuda
VQ9 Chagos
VU India
VU4 Andaman and Niccobar
VU7 Laccadives
VY0 Nunavut
VY1 Yukon
VY2 Prince Edward Island
YJ Vanuatu
Z2 Zimbabwe
ZB2 Gibraltar
ZC4 Cyprus (UK Bases):
ZD7 St. Helena
ZD8 Ascension Island
ZD9 Tristan de Cunha/ Gough Isl.
ZF Cayman Islands
ZK1 North Cook Islands
ZK1 South Cook Islands
ZK2 Niue
ZK3 Tokelau Islands
ZL0 ZL New Zealand Reciprocal
ZL1 New Zealand-Area 1
ZL2 New Zealand-Area 2
ZL3 New Zealand-Area 3
ZL4 New Zealand-Area 4
ZL6 New Zealand
ZL7 Chatham Island
ZL8 Kermadec Island
ZL9 Auckland and Campbell Isl.
ZS1 Western Cape Province
ZS2 Eastern Cape Province
ZS4 Free State Province
ZS5 Kwa-Zulu Natal Province
ZS6 Gauteng Province
ZS8 Marion Island
ZS0 South Africa
GB5CC RSGB HQ Station
Other Commonwealth HQ stations count as separate Call Areas

Results Remembrance Day Contest 2001

from Alek Petkovic VK6APK Contest Manager

VK2 Division Wins!

Congratulations to the VK2 Division for a well deserved win in the 2001 RD Contest. A good effort in the HF section and a big upturn in activity in the VHF section means that the trophy is theirs. Hopefully, this convincing win will inspire further increases in VHF activity in years to come.

I am very pleased to say that the submitted logs were of a very high standard. The message seems to have got through to participants, that VHF and HF logs should be kept separate. This has made the task of calculating the results much easier than in previous years.

Here now are the results for the contest.

Divisional Scores

Table 1 shows the placing of each division along with their overall Improvement Factors.

Table 1: Divisional Ladder

1st	VK2	3.431
2nd	VK1	1.946
3rd	VK5/6	1.228
4th	VK4	0.865
5th	VK7	0.596
6th	VK6	0.584
7th	VK3	0.421

The total scores in both HF and VHF are shown in Table 2.

Table 2: Divisional Scores

Div'n	HF	VHF
VK1	879	395

VK2	3466	398
VK3	2286	2174
VK4	2692	1297
VK5/8	2657	2638
VK6	1486	2751
VK7	1124	597

For those who wish to know how the final score for each division is calculated, I have included the following live example of how it is done. I will use the VK3 Division's figures in the calculations.

First is the calculation of Benchmarks for VK3 for 2000 RD Contest.

2000 Benchmarks (As published in 1999 Results)

HF 2886
VHF 10903

2000 Scores. (As published in 2000 Results)

HF 4754
VHF 8758

Formula:

2001 Benchmark = (0.25 x 2000 Score) + (0.75 x 2000 Benchmark)

Calculations:

HF

2001 Benchmark = (0.25 x 4754) + (0.75 x 2886)
2001 Benchmark = 1188.5 + 2164.5
2001 Benchmark = 3353

VHF

2001 Benchmark = (0.25 x 8758) + (0.75 x 8717)
2001 Benchmark = 2189.5 + 6537.75
2001 Benchmark = 8727

Those 2 benchmark figures are the scores the division needs to beat to register a positive improvement factor in each section of the contest.

Now to calculate the final score, let's use the points that the VK3 division scored in HF and VHF this year.

Formula:

Improvement Factor = 2001 Points divided by 2001 Benchmark

Calculations:

HF

2286 / 3852 = 0.593

VHF

2174 / 8727 = 0.249

The two improvement factors are now averaged to give the division's final result.

Formula:

Overall Score = (HF Improvement + VHF Improvement) / 2

Calculation:

Overall Score = (0.593 + 0.249) / 2
Overall Score = 0.842 / 2
Overall Score = 0.421

Here now, are the Benchmark figures for the year 2002.

Table 3: 2002 Benchmarks

Div'n	HF	VHF
VK1	730	213
VK2	4386	148
VK3	3461	7089
VK4	3711	1239
VK5/8	3694	1760
VK6	2374	4066
VK7	1662	918

Individual Scores

The individual scores for entrants are listed below. Certificate winners are denoted by an asterisk (*) and the top Australian scores in each section by a hash (#). Certificates will be issued to the top operators in each division. Where a multi operator station holds the top score, a certificate will also be issued to the top scoring single operator in that section. Where a single operator station holds top place, only that station will receive a certificate.

VK1

HF Phone

DE	121*
ZX	105
CEE	97
EY	35

HF CW

AU	200*
ENG	194

HF Open

VP	127*

VHF Phone

ZX	90*
VP	87
RG	45
HS	44
7RG	44
SAA	42
EY	36
DE	7

VK2

HF Phone

DCL	247*
JBC	241*
GWK	176
JAH	106
BDT	129
APP	105
VG	102
HV	96
BOR	85
EM	65
IBT	60
SS	53
ASU	51
BQS	50
EMU	48
SRC	44
AGF	43
CNI	30
BJK	26
XT	25
IGS	20
WIR	20
CF	11
BUI	4

HF CW

OI	202*#
BHO	180
PS	130
QF	104
AZR	70
RJ	54
PH	48

HF Open

AYD	437*
BO	380
WL	24

VHF Phone

HRW	102*
BDT	86
SRC	71
LCD	66
XIE	35
YHN	30
BOR	8

VK3

HF Phone

OM	219*
AHY	158
KTO	131
ADW	128
GH	96
HV	87
XQ	85
BVW	82
DKT	66
DS	65
DET	63
JK	60
WB	57
KQB	53
ABP	50
AMW	40
GIL	33
BCZ	24
EX	20
DCP	16
KK	16
DY	14
AAJ	11

HF CW

BKU	194*
MV	90
AMD	52
AAM	40
SV	28

HF Open

VP	118*
YE	104
VB	86

VHF Phone

DBQ	352*#
XQ	195
JK	185
HXR	170
GH	142
KTO	155

XJU	112
DYL	100
HAY	99
NOV	84
EST	68
CRP	65
VP	64
ZWI	64
KK	54
KKJ	54
TFE	49
BGS	36
XH	33
EX	30
YE	22
BVW	17
DCP	10
VB	10
AMW	3
KQB	1

VK4

HF Phone

DO	387*#
BAY	234
FNQ	218
FJ	202
GQ	179
RC	154
FLG	85
AWL	76
ZJ	73
ZA	65
KJD	60
BTW	59
KKN	49
ACW	45
EQ	43
DZ	37
ACB	24
PJ	18
FXL	17
ADY	16
EV	13

HF CW

BUI	176*
XW	98
IW	16

HF Open

LT	272*
GZ	76

VHF Phone

3CE	261*
AML	240
AR	209
ZBV	171
3YID	117
RC	61
OE	60
ZA	53
EV	51
FLG	23
PJ	19
ADY	18
ZJ	8
BAY	6

VK5/8

HF Phone

BP	171*
KBJ	141*
KMC	132
XY	114
WO	112
ASN	79
BQ	76
ADD	74
RV	50
FD	46
NN	41
TW	35
TY	30
AIM	22
PC	21
CTY	12
MX	9
JGM	8
UE	6

HF CW

UM	188*
HO	92
BGL	84
NJ	80
8HA	58
AU	52
BS	34

HF OPEN

BRC	627*#
ATU	240*
ET	23

VHF Phone

BRC	333*
KBJ	258*
AR	250
ZHT	224
XVS	221
ZBK	203
PC	188
HCP	162
XY	157
ZKK	139
KLD	121
ATQ	58
FD	48
UE	46
AVQ	44
ET	36
RV	36
EMI	35
JGM	28
MX	22
AIM	18
KMC	11

VK6

HF Phone

LC	230*
CSW	227
BH	123
JP	108
KHD	72
KH	57
ADI	48
OE	33
APK	30
GL	26
SAR	25
PX	21
AD	13
BDO	8

HF CW

AFW	168*
AJ	120
HD	40
HK	26
AF	22

HF Open

AR	51*
RZ	38

VHF Phone

KTN	271*
ANC	218
JIP	206
ZBP	206
AD	162
HU	161
SAA	160
BDO	145
AR	143
CSW	139
SAR	138
JP	120
ZLT	120
HAO	119
WT	63
YF	62
EH	61
HGR	49
RO	47
APK	36
SMH	23
RZ	25
KH	23
HK	20
KHD	20
MM	14

VK7

HF Phone

JGD	200*
CK	196
RN	141
RR	140
KTW	100
KH	90
KC	70
NDO	53
JAB	27
NGC	22
RM	20
PP	19
LUV	16
BM	15
KBE	15

VHF Phone

JGD	155*
HSE	139
EB	78
NDO	68
RM	50
KTW	46
FB	27
PP	18
RR	16

SWL Section

Peter Kenyon	319*#
Andrew Robertson	119

Overseas Section

HF Phone

P29KFS	159*
ZL3TX	40

HF Open

P29IO	216*
ZL2ALJ	209
ZL2AJB	68

I received lots of comments with the logs this year. From these comments it is obvious that although participation is down on last year, the spirit of the RD Contest is still very strong and that it will live on for many years

Note:

Contest Co ordinator Ian Godsil has now been allocated email address:

contests@wia.org.au,

Intruder Watch

Henry, VK8HA
your WIA Federal Intruder Watch Co-ordinator
and also VK8-Co-ord.

International Amateur Radio Union. Region 3

Monitoring systems news

The situation in Region 3 continues to be bothered by the several harmonics from DPR-Korea, the various other VFTs on many bands, the other regular broadcasters (except VoSharia, which has gone off 7085 kHz now) and the reduced activity of the jumping jammers on the 40 m band frequencies. The spurious "Christian Voice" radio signals on 21420 kHz frequently reported by VK8HA from Darwin area, gets highlighted this month, as it was heard as far away as in New Zealand too. The Monitoring Coordinators are contacting the concerned broadcaster for solving this problem.

There are reports of the occasional bursts from data transmitting stations on the different frequencies of the 20 m band and there are regular feed back from the different monitors.

The occasional loggings of the non amateur beacons on 28 MHz band are becoming frequent due to the improving conditions due to the solar activity.

The detailed reports received from the individual Societies of Region 3, may be seen for the voluminous data they have logged and compiled for the intruder watch programmes.

OM Martin VE3OAT, the Region 2 Coordinator has given a paragraph on the Mutant Beacons, which are the non amateur beacons found on the 28 MHz band also. Apart from this, he has highlighted the others like the 7039 Russian Beacons; the N0N (carriers) on 14000 and 14001; the harmonic of DPR Korea on 14250 and the 10th harmonic of Radio Majagual on 14301 kHz., heard in Region 2.

OM Ron G4GKO, has reorganized his web page, which contains lots of European loggings of these intrusions, which will be of reference value to others.

For the latest info from Region 1, pse visit the web site: http://myweb.tiscali.co.uk/rdnronald

And for info from Region 2, www.echelon.ca/iarumsr2

Sorry, the report from JARL was not received till 31 Oct 2001 and I had to send the report without it.

Compiled by:

B.L.Manohar "ARASU" VU2UR.
Regional coordinator.

VK8 Intruder Watch Report for Sept 2001

VK8HA QTH is 50 km south east of Darwin on the Arnhem Highway near the Adelaide River Crossing.
Address: Box 619, Humpty Doo, NT.0836. vk8ha@octa4.net.au

Freq	Date	Time	Mode	Bearing	Country	Ident/Remarks
03560	0509	1030	A3e		N.Korea	Pyongyang B/Cast S9 Start 1010
03560	1509	1940	A3e		N.Korea	Pyongyang B/Cast In French
07070	1509	1950	A3e			UI B/Cast And Jammer
14320	0209	1200	Pkt			UI Packet making mess of S.E.A.N.E.T
14320	1309	0630	F1?			UI F1
14025	0309	1215	M7b	330		11mile?.S9 steady. CI at 1236
14005	0409	1250	F1b	330		S9 Daily
14040	0409	1255	Pkt	—		Daily
14040	1309	0620	Pkt	320	Chinese?	Daily..
14057	0409	1253	N0N	345		Daily.some CW.pkt As Usual CW= 201 Id 8s5vu Qsa 2
14001	0809	1230	N0N	—		Carrier. SSB Japanese/American Voice Radio Check.testing 4 3 2 1 How copy
14001	0909	1215	SSB	350	Chinese .	And Digital
14116	1309	0620	Pkt	—		UI Pkt
14414	1309	0630	F.	—		UI Multichannel
14427	1309	0630	F1b	—		UI
14178	1309	0630	SSB	330	Indones	Fonepatch.s9 / S2..usb
14120	1309	0630	SSB	—	Indones	Indon Crims on LSB
14100	1309	0630	SSB	—	Indones	Indon Crims on USB
14080	1309	0630	SSB	—	Indones	Indon Crims on USB
14075	1309	0630	SSB	—	Indones	Indon Crims on USB
14115	1309	0650	SSB	215	Indones	Indon Crims on LSB People Smugglers?
14120	1309	0650	SSB	215	at sea	Same as above.moved here when jammed
14180	1209	1530	Pkt	330		Strong Stn in 330 Degs Afghanistan?
14180	1209	2200	Pkt	300		Weaker Stn in 300 Degs Lybia? Still going after the 11-09-2001 disaster
14301	1509	0800	Bip	350		Bip bip with odd Chinese Packet bursts
14057 0509)	1609	1205	F1	350		Back again after two weeks off air.(cl
14005	1809	1215	F1b	020		UI
14015	1809	1250	F1	020		UI sounds same as 14005
14127	1809	1250	F1	330		UI Multi Channel..cl 1254
14123	1809	1250	F1	330		UI Multi Channel CI At 1254
14050	1809	1300	?	350		UI Multi Channel modulated noise
14185	2509	0745	F	333		No QSB . 0750 changed txor Beam/log as sig dropped from over S9 To S7 ..VK8 11mile?
14180	2509	0745	Pkt	330-300		Not very active now..only short bursts of xmissions..then nil for long periods
18105	0809	1220	A3E		China	B/cast Yunnan 3rd harm.only S1
24890	0809	1230	A3E			2 B/Cast Stations . No ID as S1 only
24890-24990	Dly	24hrs			VK8	OHR northeast of VK8HA approx 50km Being at rear of their ant. low sig at VK8HA

Will check with radio inspector when WIA Fed IW co ordinator has been appointed. VK8HA is on the books.

28MHz band is full of Chinese CB and other intruders.

DX is also getting stronger

All the best from VK8-land and Henry In Humpty Doo
vk8ha@octa4.net.au

VK4 Summary for September 2001

VK4 Co-ordinator, Tom Walker, VK4BTW. QTHR
13 Bothwell St., Toowoomba, Qld. 4350 Australia

Freq	Date	Utc	Emm	Details
3.560	0209	1020	A3E	N.Korean B/C stn. may be at Kojang. (34 loggings)
14.067	1209	0510	WBD	Continuous "bubbling"sound, some long pauses.(8 loggs.)
21.420	0809	2145	A3E	H-3 of N.Korea B/C stn. On 7.140 Mhz. (27 loggings)

Also many single frequency reports of Indonesian and Vietnamese pirate stns. on 7MHz and 28 MHz bands. Single freqs. of multi-channel wide band data stns. in 14 MHz band. The inconsistency of these makes regular reporting difficult.

How's DX?

Ross Christie, VK3WAC
19 Browns Road, Montrose 3765, Vic.
Email Vk3wac@aol.com

Something old, something new... and a humble achievement

For those who have missed the news, P5 North Korea has been put on the air by Ed, 4L4FN who works for the UN World Food Program. Ed has been requesting official authorisation to operate an amateur radio station in P5 but had always been unsuccessful until now. However, persistence does pay off, and a recent concerted effort on Ed's behalf has resulted in him gaining 'verbal permission' to operate. He is currently awaiting the official documentation from the authorities but has wasted no time in getting on the air as P5/4L4FN. He expects official documentation (which is required for recognition by DXCC) by late December. So if you hear him give him a call and worry about the official status later. Currently he is operating SSB only (though I have heard that he is expecting a paddle key in the post shortly, good man!) and is using only simple antennas so don't expect big signals from him. His preferred haunts are 20m (around 14205kHz) and 10m (around 28575kHz) split 15 – 35 kHz up. Because Ed has an official job that consumes more than 12 hours of his day his on air appearances will naturally be restricted (this is not a DXpedition) and the best time to catch him is between 1400 – 1500 and 2200 – 2300 UTC. He will be leaving P5 for a short holiday home over the Christmas period and expects to be back around mid January when he will be bringing some equipment for the digital modes. If you are looking for P5 (and who isn't?) then get in there and do battle, good luck!

From one rare DXCC entity to a completely new one. Bill Moore, NC1L, the DXCC Manager has announced that Ducie Island (a part of the Pitcairn Island group and located at lat. 24 39'57" south and long 124 48'21" west) has been accepted as a new entity. Ducie Island was nominated for IARU recognition by PIARA (Pitcairn Amateur Radio Association) in March 2001. PIARA applied to IARU Region 3 and after due consideration by IARU members worldwide Ducie Island was granted recognition on November 16, 2001. As such, under DXCC rules, Ducie Island has become a separate 'political entity' and qualifies as the 335th entity. DXCC recognition is effective from 0000 UTC 16 Nov 2001. QSL cards for contacts will be accepted by DXCC beginning 1 June 2001, however QSOs dated 16 Nov 2001 and later will count. Please note, this island has been activated as IOTA OC-182 but these contacts will not be recognised for DXCC purposes. So as to get this 'new one' into as many logs as possible, as soon as possible, a DXpedition had been planned but had to be cancelled due to severe storms in the area. Apparently the team had to abandon attempts to land on the island because there was a real danger to life and limb. However, some of the equipment destined for the DXpedition has been donated to PIARA who hopefully will use it to mount another attempt to activate Ducie Island.

Another note from Bill, NC1L concerns an application to DXCC for recognition of the XU7AAR (Cambodia) operation that took place in late 1999. Processing had been on hold awaiting supporting official documentation but now the paperwork has come through and it has now been accepted for DXCC credit. So if you have had this one rejected in the past it can now be claimed in your next submission and will be accepted.

So much for the new and exotic, now for my more humble achievement. I managed to grab a couple of Belgian stations who were using the special OQ prefix issued to celebrate the birth of H.R.H Princess Elisabeth who arrived on the 25th of October 2001. As I write this, the postman has just delivered a letter from Rene, OQ5GI, containing a commemorative QSL card featuring the happy royal couple with their new addition and a Belgian flag sticker. The OQ calls will be on air until the end of the year. A special award is on offer for those who work 5 stations during the qualifying period. The award manager is Egbert, ON4CAS/N1TOI

Not much on offer this month in the way of DX but then I suppose the weather is turning a lot cooler in the northern hemisphere and planning, rather than operating, will be occupying the Dxpeditioners. Never mind, don't give up but get on the bands and have a listen, if you hear anything exciting then drop me line so I'll know what I missed.

The DX

3D2, ROTUMA. Tony, 3D2AG, will be active from Rotuma until the 10th of January 2002. He has been heard often the last few weeks on 10 and 20 metres, CW and SSB, beginning around 0130 UTC. QSL direct to 3D2AG (address in the callbook). [TNX 3D2AG and OPDX]

9L, SIERRA LEONE. Zbyszek (Zbig), SP7BTB, will be operating as 9L1BTB from Sierra Leone until mid 2002. Currently he is in Freetown working for the United Nations. He is a prolific operator and plans to be on 40, 20, 17, 15 and 12 metres SSB. QSL via SP7CDG. [TNX SP7BTB and OPDX]

OA, PERU. Rene, DL2JRM and Daniel, DL5SE will be activating San Lorenzo Island (SA-052) on the 3rd until the 13th of January 2002. The pair have applied to the authorities for the special callsigns 4T4I (David) and 4T4X (Daniel). QSL via their home calls. [TNX VA3RJ and 425 DX News]

P5, NORTH KOREA. Ed, 4L4FN, is operating from this eagerly sought DXCC entity. He is mostly active on 20 and 10 metres, around 14205 and 28575 kHz, SSB only (at the moment). Official status is still a bit grey as he only has 'verbal' permission at the moment, but official

documentation is on its way to satisfy DXCC. Those on the 'net' can visit http://www.amsatnet.com for news and details of his current operating times. QSL via Bruce Paige KK5DO, PO Box 310, Alief, TX 77411, USA. [TNX KK5DO and 425 DX News]

TM, FRANCE. Patrick, F6OIE, has been issued with the special call TM0A. The call will be on air during the period of the 19th of Jan until the 1st of Feb 2002. QSL via F6OIE. [TNX F5NQL and 425 DX News]

Special Events

The special call **TM4AMD** will be on air from France between the 26th of December until the 13th of January. The call is to publicise the 24th Rally Arras-Madrid-Dakar (used to be called the Paris-Dakar rally). QSL via F6IGF direct or bureau. Further details can be had from http://perso.wanadoo.fr/ara62 [TNX F5PSI and 425 DX News]

OX, GREENLAND. Rene, OX3HX is currently active as **OX1AWG**. This special call is for the Arctic Winter Games that run from 17th until the 24th of March 2002. QSL via OX3HX. [TNX PA3GVI and 425 DX News]

Round up

If you like working stations based in the **Antarctic** then keep an ear out for the following who will all be stationed down there for the coming months; CE9NKR, CE9MFJ, EM1HO, EM1KCC, KC4/N3SIG, KC4AAA, KC4USA and VK0KMT.

Anton, ZS4AGA is a newly licenced amateur radio operator. He is currently stationed at **the SANAE Base on Princess Martha Coast (AN-16).** Anton will be there until February 2002 and plans to operate the bases amateur radio station **ZS7ANT**. [TNX DL5EBE and 425 DX News]

R1, ANTARCTICA. Oleg, UA1PBA will operating as **R1ANF** from the Russian Antarctic Base "Bellingshausen" (AN-010) beginning around mid December. QSL via RK1PWA. [TNX DL5EBE and 425 DX News]

HF0, POLAND (ANTARCTICA). Miroslaw Stefanski, SP7JKW will be operating as **HF0POL** from the Polish base 'Henryk Arctowski' on **King George Island, South Shetlands (AN-010).** He will be there from the 1st of Jan until the 31st of Dec 2002. Miroslaw plans to be on CW, RTTY and PSK31 (maybe with some SSB thrown in for good measure) on all bands including WARC. QSL via SQ5TA either direct to Artur Tabaszewski, ul. Wiejska 100, 26-606 Radom, Poland or via the bureau. [TNX SP2FAP, SQ5TA and 425 DX News]

VP8, South Orkneys. Mike, GM0HCQ (VP8CMH/mm) had expected to operate as **VP8SIG** from **Signy Island** in the South Orkneys on the 18th and 19th of Nov. However storms and strong winds prevented a safe landing. His next visit to the island will be sometime in late January. He is now sailing to King Edward Point, South Georgia (AN-007) and he thinks he will be able to operate as VP8SGK as and when his spare time allows. More information about the ship and details of the trip can be found at the British Antarctic Survey web site at http://www.antarctica.ac.uk/diaries/es/ especially information specifically related to Mikes ship the RRS "Ernest Shackleton". [TNX DL5EBE and K8AJS and 425 DX News]

YA, AFGHANISTAN. A report from The Daily DX says that the foreign ministry of the Islamic Republic of Afghanistan (Northern Alliance) issued the call **YA5T** to Peter, ON6TT, Matts, SM7PKK and Robert, S53R. It permits operation on all bands and modes. Hopefully this is just the beginning of the road to an active amateur radio presence from Afghanistan.

QRP DXCC AWARD. A QRP DXCC Award certificate is to be issued for working 100 different DXCC entities on the DXCC List, while operating at genuine QRP powers, e.g. 5 watts or less. Applications for the award will be accepted from the 2nd of January 2002, however valid contacts may have been made at any time since 15 November 1945. The award is not endorseable and is separate and distinct from the traditional DXCC award program. Certificates will be dated but not numbered. QSL cards will not be required for verification but applicants must certify the authenticity of log entries and information. Further details and application forms etc can be found at the following website http://www.arrl.org/awards/dxcc/qrp/index.html [TNX NC1L and 425 DX News]

5A. LIBYA. Abubaker, 5A1A, says that there have been many pirate stations active from Libya over the past few months. He sends a list of the only government authorised stations active at the moment, these are;

5A1ASC Assaker Club station. QSL via DK4HB direct or via Bureau.

5A1A Abubaker Alzway. He will be using his existing direct QSL information until he goes to Germany in the next few weeks.

5A1TA Tark Abu Kris. QSL via EA3GIP direct or via the Bureau.

5A1HA Haytm Hashim. QSL via DJ9ZB direct or via the Bureau.

The Australian 80 metre DX window is to be expanded to 3776 – 3800 kHz. The WIA approached the ACA with a proposal to creating a shared arrangement with the current commercial users of this piece of spectrum. The ACA, after negotiations with the WIA and the commercial users, has decided to re-allocate this part of the band to amateurs on a primary basis beginning on the 1st of Jan 2004. The commercial users are to migrate to their newly allocated channels, in the land mobile service adjacent to our new amateur band, by the end of Dec 2003. [TNX OPDX]

Sources

This month our thanks go to the following people and organisations for the information and news in this months DX Notes; 3D2AG, SP7BTB, VA3RJ, KK5DO, F5NQL, F5PSI, PA3GVI, DL5EBE, SP2FAP, SQ5TA, K8AJS, NC1L, 5A1A, The Daily DX, 425 DX News and OPDX.

ar

VK2 Division Annual General Meeting

The Annual General Meeting of the VK2 Division will take place on

13th April 2002,

with nominations and agenda items due by

2nd March.

Members will be further notified by post in the middle of January.

Pat Leeper VK2JPA
Divisional Secretary

VHF-UHF

AN EXPANDING WORLD

David K Minchin VK5KK
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E-mail: tecknolt@arcom.com.au
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Phone: 0403 368 066 AH ONLY
All times are in UTC.

6 Metres

Norm VK3DUT reports ... I thought I'd pass on some brief notes of some exciting openings we've had in this corner of OZ (QF32ve) for this equinox.

5/10/01 JAs from 0200z, 12/10/01 JAs 0114z, 14/10/01 from 0843z, heaps JAs and at 0900x **BD4EBC** (China - new one for me), last JA at 1204z, Had JAs in on several other days but on 28/10/01 1255z (late here) **OE2UKL, OE3MWS, OE3WBA and OE1WWA** JN67/68,at 1305z (brief opening), there was an Aurora running at the time but I don't know that it played a part, however the VK8RAS/b was in at the same time and this may have provided the link. 49.750 + - and 48.250 also very strong at the time. Also heard but missed DL7AV, apparently he also heard me but it all happened too quickly!

8/11/01, 0510z, **VU2LO** 5X6 ML88, 0538z, **A45XR** 5x3, LL93, 12/11/0, 0725z, **HZIMD** 5X7 LL34

13/11/01, N6XQ, 0015z, dm12, also heard XE1kk/b XE2UZL/b and KL7NO very weakly, then from 0744z - 0810z, **OH1XT** 5X5 KP01uk (15,517km), **ES1AJ, OH7PI, OH7KM, ES2QN, OH6KSL, OH3BHL, OH5LK, OH2TP, ES2KM, OH4OH, ES1CW, ES1WN, ES4EQ, ES1II, ES3BR, ES4EQ** sigs bet. S2 -s9! The VK8RAS/b was there again as was 48.239.4/6 (multi carriers) 49.750 + - 45.250 (not from ZL) also heard DL and ON weakly on cw. 14/11/01Similar conditions building with vk8ras/b etc in but my Antenna rotator stuck! I did hear and was heard by OH1XT but much QSB and stuck about 15 deg off OH!!! (I heard my 5x5 report but not sure if he got mine.

19/11/01, 2137z **KL7CDG** 5X3 BP51, 2158Z, **KL7FZ** 5X2 (Alaska at last!)

20/11/01 from 2232z - 0018z, W5OZI, W7XU/0, N0QJM, N0VSB, K0UB, N5WS, NOLAN, AA5XE, W6JKV/5, W9JN (EN54dn, 15,246km), W0SD, KM0T, KA0J, **VE7XF** AT 2314Z, W7USB, N7AU.

All up 8 new ones for me, some of these rather unexpected but very exciting and I don't believe it's all over yet.

Many other nights where various indicators heard very strong but no contacts made but I liken it a bit to fishing -"you never know what's out there'! BTW, I use 100 W to a 'H' frame with 4x5's at 55 ft. My location is approx 60m ASL with very average takeoff in any direction (rising ground to West/ NW. I also operate on 2 m&70 cm with regular contacts to VK1, 2 on aircraft enhancement etc and heard/worked various VK2's 3's 4's 5's and 7's during the recent meteors showers. Norm VK3DUT

VK 6 metre Beacon's in disarray?

Just how useful are our beacons for overseas DX on 6 metres? While we still have restrictions on the use of 50 – 52 MHz in some areas, VK still has three Beacon sub bands

John Kirk VE3XT has helped get atleast 20 North American beacons going and has contributed the following looking back into VK from North America. "The advent of 6 metre transceivers with scan capability has changed the listening habits of DX'ers. From a North-American perspective, I can tell you that there are literally THOUSANDS of hams scanning 50.000 to 50.100 for any sign of beacons. There are, at best, a few dozen who remember to check the Aussie 52 MHz beacon block, because doing so would GREATLY increase the scan cycle time, and for most North Americans would mean listening to a great deal of TV crud that ends up in the 51-52 MHz.

North Americans are nowhere near as adept as Aussies in spotting openings based on reception of TV carriers. They probably wouldn't want to, for the same reasons as above - increased scan cycle time.

You can see where this is going, can't you? If we accept that 6 metres is an international DX band (as opposed to a "work your neighbouring grid square" band), and that the purpose of our beacons is to alert overseas operators to openings that might otherwise get missed, shouldn't we place those beacons on frequencies that are actually monitored?

I think we'll all work more DX if we turn up the heat on efforts to move them (VK 6 metre beacons) down the band. I personally prefer the 50.000 to 50.080 block, again because of my knowledge of the scanning habits of overseas operators, but it is conceivable that we could modify their behavior to include up to 50.3XX if they were rewarded with more DX contacts. I've checked the 50.000 to 50.080 block, and there are still some frequencies available that would give us worldwide clear frequencies, but they are going fast! Good beacons are going to be even more important as the sunspot cycle fizzles, and we have to go back to making our contacts the hard way - 5 hop E etc.

When you look at how the rest of the world has set up beacons we are largely back in the sixties with our lot except for a few good useful beacons set up by dedicated 6 metre operators. Putting a beacon on below 50.1 MHz might cause pain in populated areas but we plenty of country sites are available. Time to fix up our act?

Experimental 2 metre Beacon in VK3

Chas VK3BRZ reports ... Lee VK3PK and I have placed an experimental PSK31 beacon in operation on 144.500 MHz Currently the beacon sends its callsign, latitude/longitude, 6-character grid square, power, antenna type and height

above sea level. The ident sequence repeats at 1-minute intervals with a CW ident every 4th cycle. There is some APRS-format data at the start of the ident cycle

At this stage the beacon is temporary. We expect to keep it in operation over the summer DX period, say to the end of March, after which we will review its usefulness and/or future development. Its callsign is VK3QM. The equipment consists of a Kenwood TR-751A delivering about 12 W to a Halo antenna mounted on the roof of my work QTH in Geelong. This is a 2-storey building on an elevated site not far out of the city centre. It has a great take-off in every direction including VK7, except to the west, where the nearby Barabool Hills obscure it a bit.

Its short-term stability over any one-hour period is within 50Hz or so, but over a day will depend on the ambient temperature. Reports are welcome ... Chas VK3BRZ

2 metre Sporadic Es

John VK5NJ reports.. Tuesday morning 3-12-2001. It started out with loading up a new 80 m dipole, open wire feeder, roller inductor ATU on 6 metres! It loaded up ok so I put out a few CQ cw calls. I worked VK4JH Joe he was 559 at 2348Z. A bit later I worked Joe again on SSB but lots of QSB. I worked VK4FNQ John, on 50.150 MHz. John suggested listening on 2 m he was now hearing our 144.550 beacon, we went to 144.100 @0024 I couldn't believe my ears & eyes our SSB reports VK4FNQ was 57! My 2 m antenna is a Diamond X300 collinear vertical 11 metre above the ground. John was also hearing our 146.900 FM repeater also. .....73 from John VK5NJ.

JAs smash world 75GHz record

On 16 November 2001, at 1310 Japanese standard time, JA1ELV/2, located in PM95JI, worked JA1KVN/1 in QM06BF, on 75 GHz SSB for a new world record of 151 kilometres, just 6 km more than that set up earlier this year by Will, W0EOM and Bob, KF6KVG.

JA1ELV/P was heard at RS45 while he copied JA1KVN/1 at RS43. JA1ELV/1 had 3 mW output to a 50 cm dish and was located at just under 2000 metres ASL on the side of Mt. Fuji. JA1KVN/1 had 1 mW output to an 80 cm dish and was located 296 metres ASL on the slopes of Mt. Tsukuba.

The low relative humidity (around 42%) and fine weather obviously helped a lot! ... from Peter Day G3PHO. I believe Peter is coming to VK in 2002 so I'll keep you posted

New North American DX records on 241GHz and 322GHz.

At 01:45z on Dec 15th, 2001 a QSO was made between W2SZ/4 (op: WA1ZMS) and WA4RTS/4 on the 322GHz band over a whopping distance of 0.5 km. Both stations were located in FM07ji.

At 02:35Z on Dec 15th, 2001 a QSO was made between W2SZ/4 (op: WA1ZMS) located at 37-21-13N 79-10-15W (FM07ji) and WA4RTS/4 located at 37-21-49N 79-10-19W (FM07ji) on 241GHz over a distance of 1.1 km. This is a North American first for the band and a new NA record at the same time.

Both of the about QSO's were made using MCW and wideband FM IF receivers. Power output on 322 GHz is estimated to be just a few microwatts, while on 241GHz the power is a measured 0.75mW.

The stations are constructed of 80.6 GHz free running Gunn oscillators driving GaAs diode triplers (Univ of Virginia design) to give output on the 241 GHz band. The triplers have a tiny amount of 4th harmonic output, which was used for the 322 GHz QSO. Both stations use homebrew 6-inch parabolic dishes with hyperbolic sub-reflectors. ...Brain WA1ZMS

Microwave Primer Part Twenty:

Where do you get what you need!

Maybe this part should have been first, not towards the end of the series! All the way along I have given a few clues as to different designs and where to go looking for some bits. The truth is it does take a little time to find something's but a surprising amount of parts and assemblies are available locally. This part should help you start looking, like it or not the Internet is going to be your best tool for this.

We have already discussed the various designs around. By now you should have some idea on where you want to start. If you want to find some of the designs I have been talking about then the following website is your FIRST stop! All Dubus articles archived since 1982! http://www.qsl.net/ok1cdj/dubus Another place to start from is on my website http://members.ozemail.com.au/~tecknolt/linksto.htm This will get you to some better pages with better links, etc.

Another place to start is WA1MBA's Microwave reflector; visit http://mbs.valinet.com/mailman/listinfo/microwave to subscribe.

Printed Circuit boards form the basis of most projects. FR4 Glass fibre is used for most applications up to 2 GHz with Teflon Glass fibreboards from there up. While PC board can be sourced locally or on the Internet, the etching of the board is a bit of an art with the tolerance required for filters and etc frequency dependant striplines. Luckily a few amateurs are well set up to do PCBs. For years Norm VK5ZAH has done PCBs for the Equipment Supplies projects including Teflon up to 10 GHz. Norm has a very good library of artwork for some of the overseas designs. He can be contacted at nrosie@mail.mdt.net.au

Semiconductors like Gasfets and Hemt's can be sourced locally but mostly only in quantity buys. MMICs are available through a few sources in Australia. MMICs are perhaps the most common "building block" part of any project. The Internet has a few sources overseas but sometimes just buying for yourself can be a bit expensive when you have to buy ten times as much as you need. Doing searches on Ebay is a good starting point, after a while you will find a few of the regular traders who handle surplus "new" stuff. Perhaps the best option is to get help from another amateur or group that is already sourcing bits. The Equipment Supplies still has a reasonable stock of parts, email me or maybe I can give you a few names to try in your neighbourhood!

Another one is SHF Microwave Parts Co at www.shfmicro.com. Or just use a good search engine on the Internet and plug in a few part numbers and see what you get ... usually a lot of junk but a few gems rise to the surface!

The easiest way is to build a kit; after all some one else has already done part of the work by finding all the bits! Not too many kit vendors exist globally who handle microwave designs. Locally the

"Hey, Old Timer..."

If you have been licensed for more than 25 years you are invited to join the

Radio Amateurs Old Timers Club Australia

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Write to

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or call Arthur VK3VQ on **03 9598 4262** or Allan VK3AMD on **03 9570 4610**, for an application form.

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Silent keys

Brian Edward Toomath VK4BET
Ted Miles VK2FLB

Equipment Supplies Committee (WIA SA) produced 1,000's of kits up until recently but currently only trades on a restricted basis until we can find someone keen enough to run this side!

Mark VK5EME has a good selection of kits for amplifiers, ATV and transverters up to 1296 MHz have a look at www.minikits.com.au. Overseas perhaps the best known is Down East Microwave in the USA. The current exchange rate does not help VK amateurs much but the kits are first rate. Down East can be found at www.downeastmicrowave.com .

Ok that's all the new stuff but what about surplus stuff? Locally it varies from state to state. VK5 has been one of the luckier areas with the Defence and associated industry here being a significant part of the economy. While not as good as there were, scrap yards usually turn up hardware like waveguide, dishes, coax, microwave transmitters and etc. Half of it (atleast!) is junk but it is like prospecting, just keep digging. Auctions are another source but do your homework otherwise you will go home with some expensive trash rather than trinkets! Dishes are easy to source, thanks to Pay TV.

If all else fails ask around. Drop me an email and I will try and help.

In closing

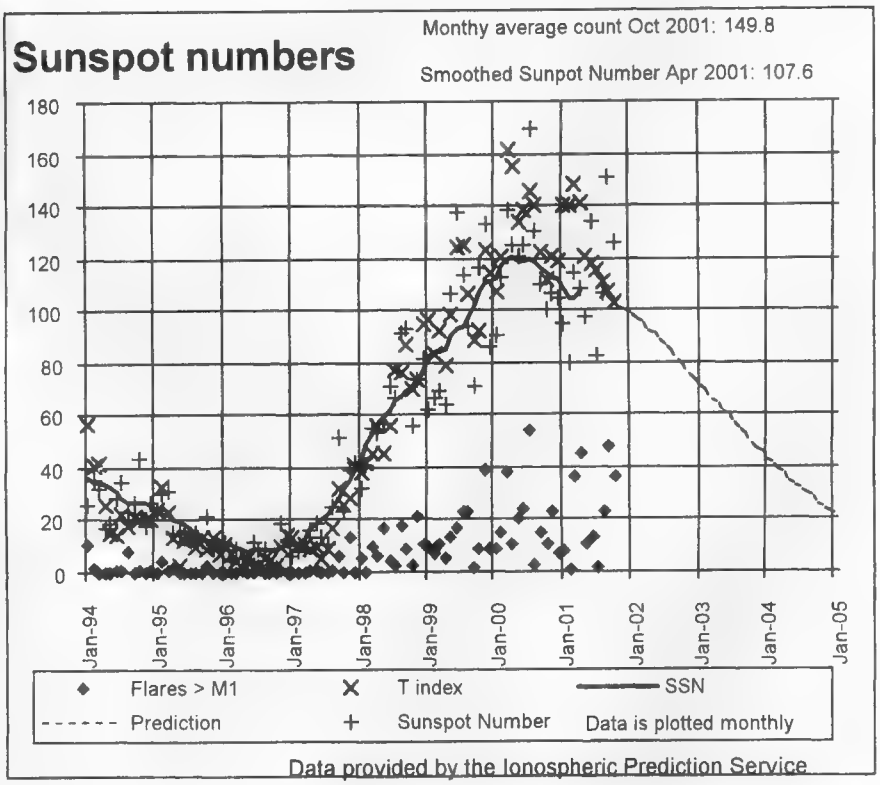
Welcome to 2002. We still have 420 – 450 MHz although this year will be this bands most challenging time. Various alternative bandplans have been floating around, sort of Plan B, Plan C and Plan D stuff depending on what happens where. Stay close to your local WIA Division to keep abreast of the issues and have some input.

Doug VK3UM has sent in the following .. I have just been advised that DUBUS will cost the same as last year ($45-00) Please forward subs in the normal manner ($45) as below and if you know of anyone else please let them know as well. I will make the cut off the first week in February 2002 so PLEASE try and remember! Doug McArthur, 'TIKALUNA, 26 Old Murrindindi Rd. Glenburn Vic 3717

I'll leave you with this thought .. "In any contest between power and patience, bet on patience!"

73. David VK5KK

nr



Gil Sones VK3AUI
30 Moore Street, Box Hill South, Vic 3128

Digital Meter Supply

The digital meter supply is a simple means of providing a floating isolated supply to power a digital meter module. These require a floating supply and at least in the USA are appearing as surplus at attractive prices at hamfests and such. A suitable floating power supply was described in QST September 2001 by Mike Bryce WB8VGE.

The circuit which provides two floating supplies generates each supply using an OP Amp operating as an oscillator to drive a switching transistor with the primary of a small audio transformer as its collector load. The centre tapped secondary drives a rectifier circuit which feeds the supply to the meter via a simple Zener diode shunt regulator. The power input to the circuit is passed through a three terminal regulator to stabilise the circuit. A limiting resistor is placed in series with the collector supply to each switching transistor.

The circuit is shown in Fig 2. The components are all relatively non critical. The transformers are 200 ohm Centre Tapped primary with an 8 ohm secondary. Similar transformers are readily available and were used as output transformers in transistor radios. Provision is made in the circuit for supply from two sources via steering diodes D1 and D2. This may not be required but the diodes do protect from reverse polarity. The current drawn by the circuit with both supplies is 140 mA. The frequency of operation is around 2.5 kHz.

The circuit would also be suited to a variety of applications where floating or negative supplies are needed.

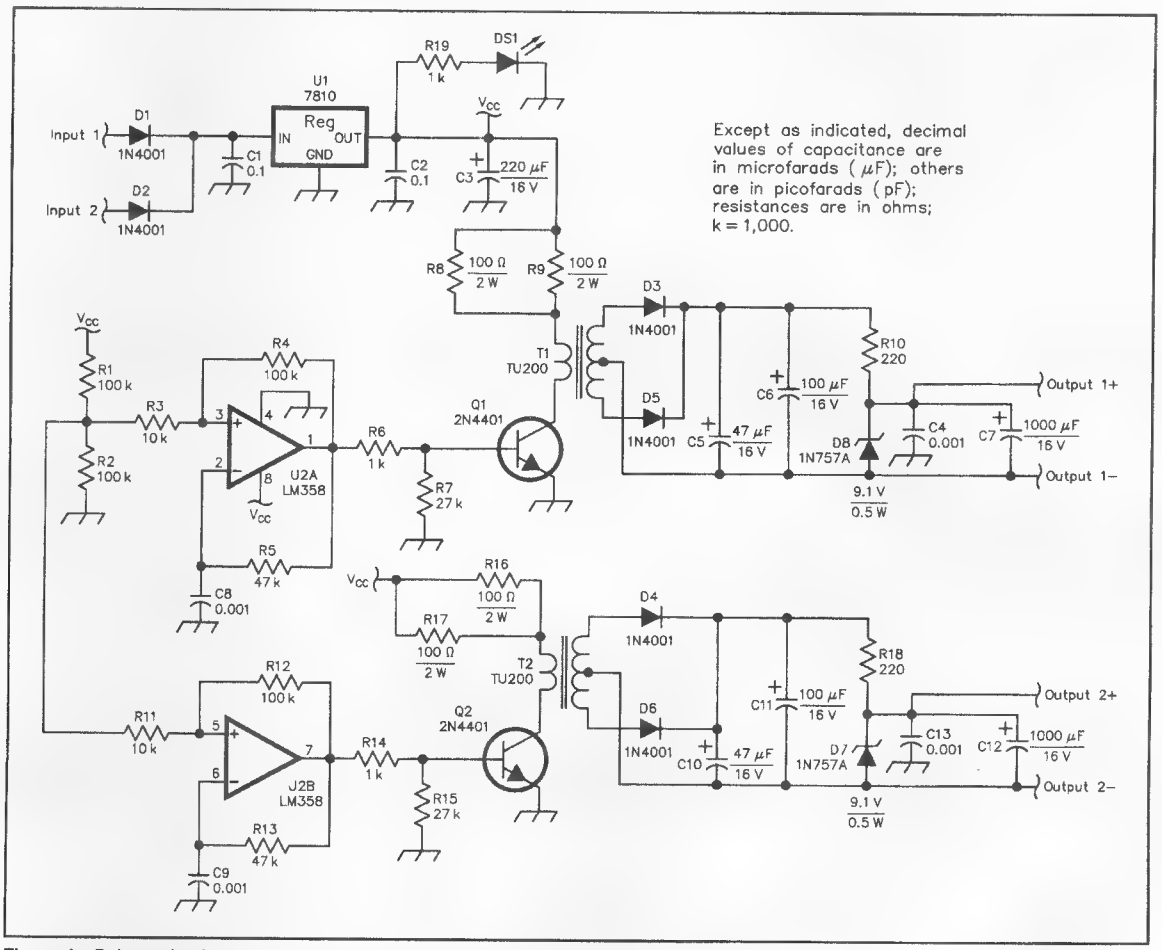


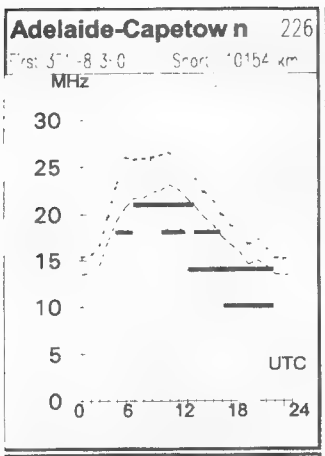
Figure 1—Schematic diagram of the digital meter supply. Part numbers in parentheses are from Mouser Electronics, tel 800-346-6873.

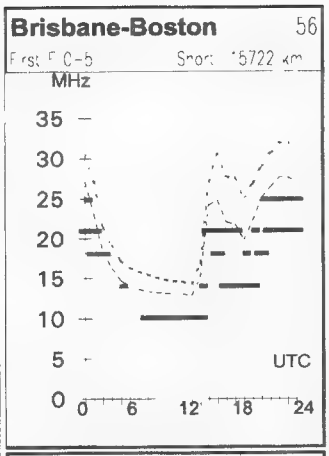
C1, C2—0.1 μF ceramic.
C3—220 μF electrolytic, 16 V (140-XRL-16V220).
C4, C8, C9, C13—0.001 μF ceramic.
C5, C10—47 μF, electrolytic, 16 V (140-XRL-16V47).
C6, C11—100 μF, 16 V.
C7, C12—1000 μF, 16 V (140HTRL16V1000).
D1-D6—1N4001 (625-1N4001).
D7, D8—1N757A (610-1N757A).
DS1—Red LED.
Q1, Q2—2N4401 (610-2N4401).
R1, R2—100 kΩ, 1/4 W.
R3, R11—10 kΩ, 1/4 W.
R4, R12—100 kΩ.
R5, R13—47 kΩ, 1/4 W.
R6, R14, R19—1 kΩ, 1/4 W.
R7, R15—27 kΩ, 1/4 W.
R8, R9, R16, R17—100 Ω, 2 W (282-15-100).
R10, R18—220 Ω, 1/4 W.
T1, T2—Transformer, 200 Ω pri/8 Ω sec (42TU200).
U1—7810 voltage regulator (511-L78M10CDT).
U2—LM358 (511-LM358N).
Heat sink (532-576802B31).

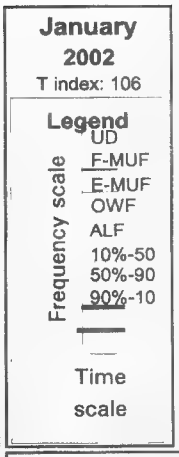
Fig 2. Digital Meter Supply.

HF Predictions

by Evan Jarman VK3ANI
34 Alandale Court Blackburn Vic 3130



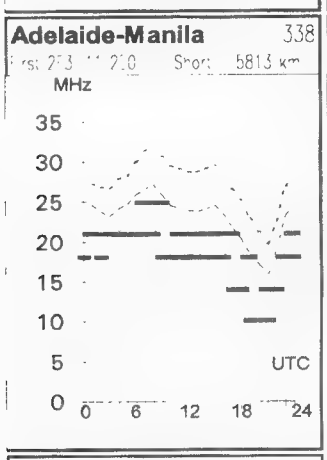


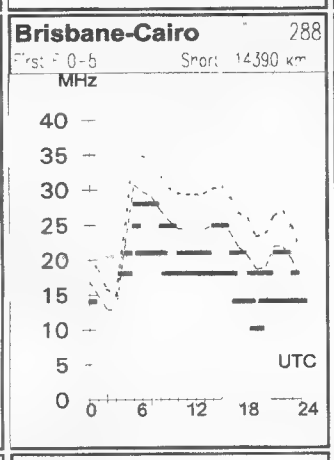


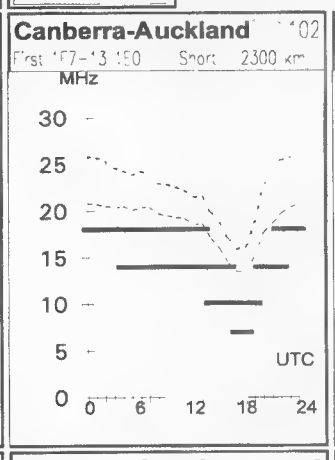
These graphs show the predicted diurnal variation of key frequencies for the nominated circuits.
These frequencies as identified in the legend are:-

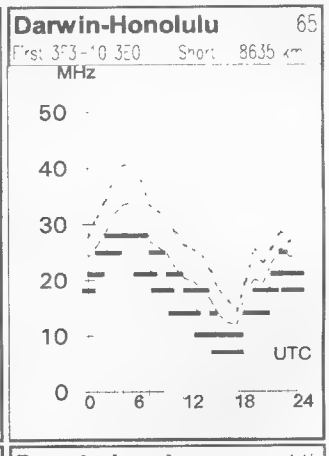
- Upper Decile (F-layer)
- F-layer Maximum Usable Frequency
- E-layer Maximum Usable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency (D region)

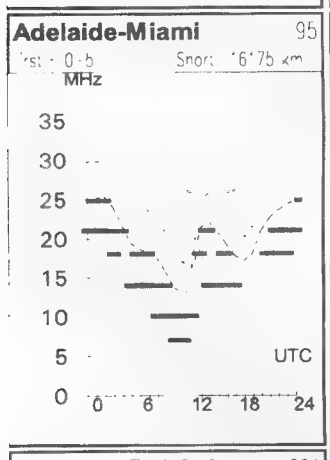
Shown hourly are the highest frequency amateur bands in ranges between these key frequencies, when usable. The path, propagation mode and Australian terminal bearing are also given for each circuit.
These predictions were made with the Ionospheric Prediction Service program: ASAPS Version 4

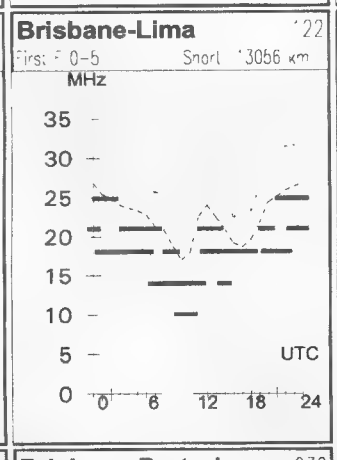


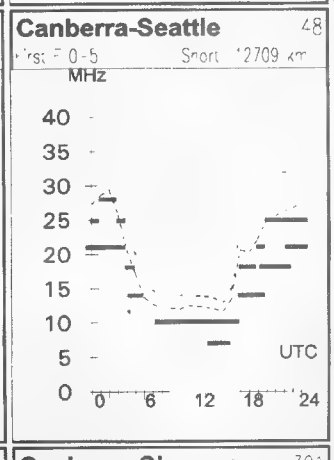


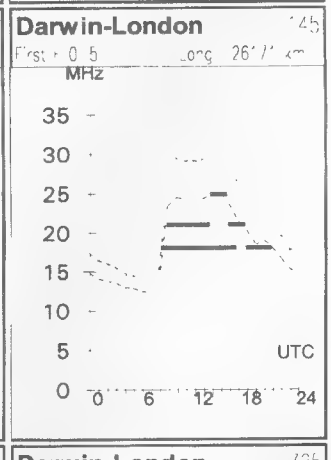


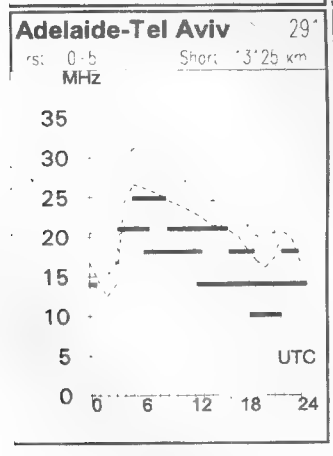


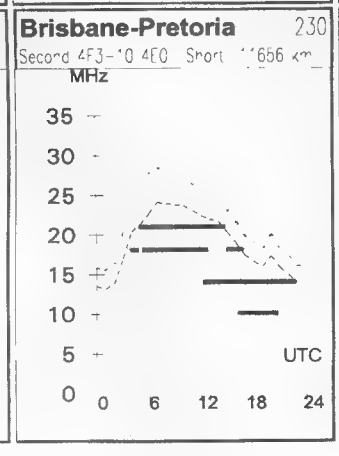


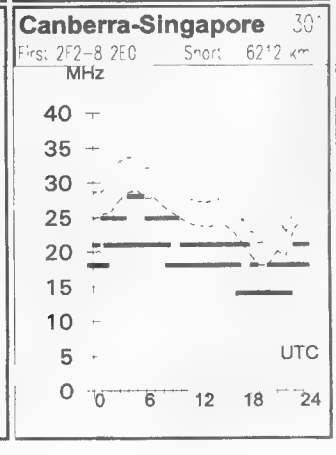


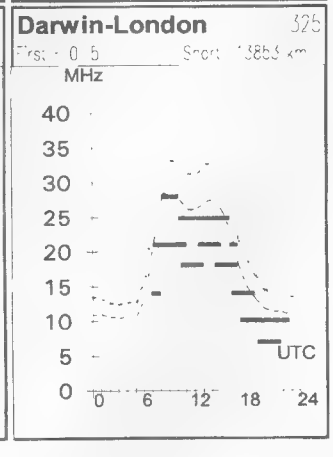


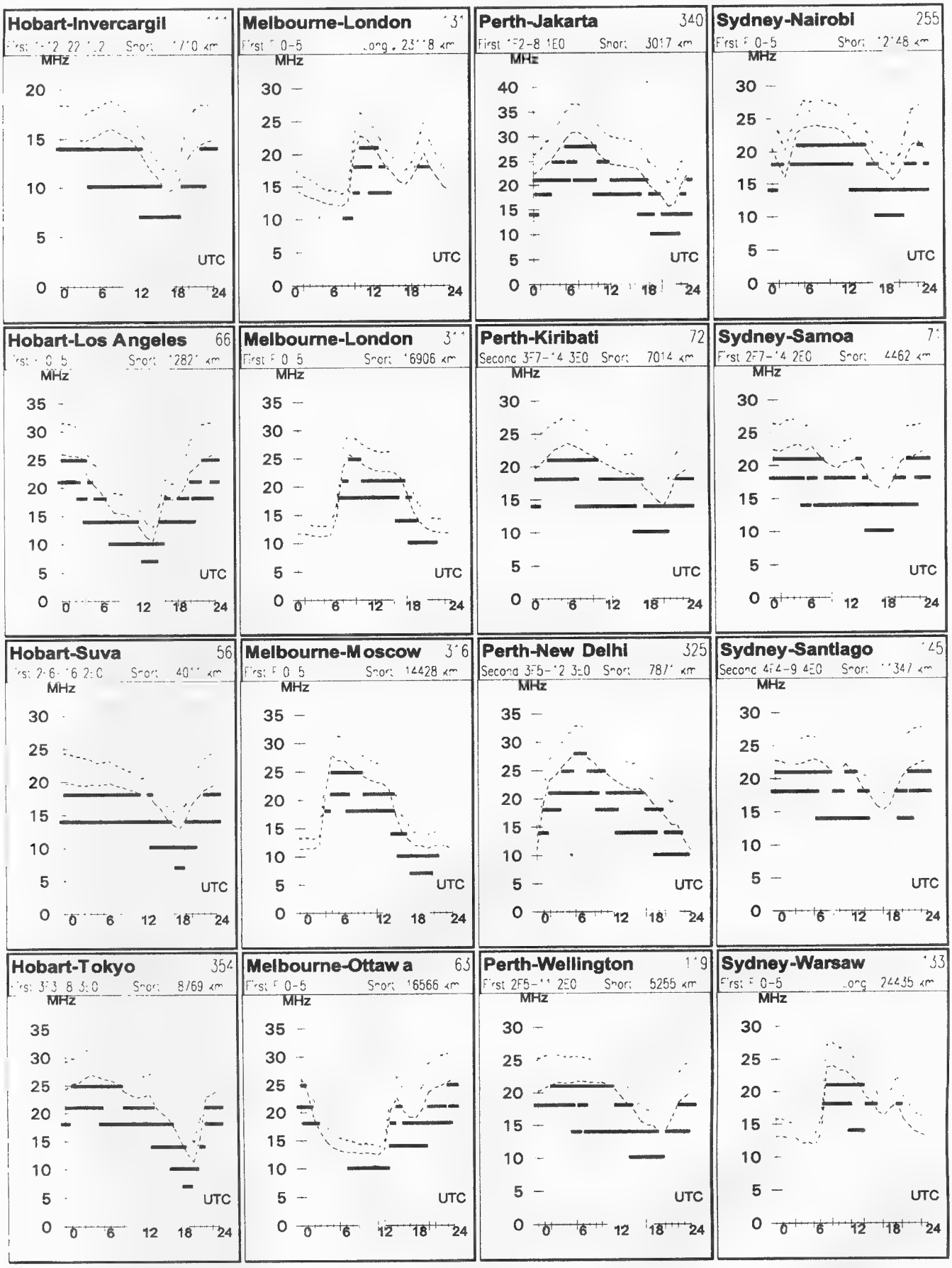








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Perspective on recruiting and training

Amateur examinations

Recently a very good friend of mine gave me a printout of the New Zealand Amateur Radio Transmitters question bank which is published on the Internet (with answers) and is available to students. What a marvellous idea this is! The bank contains 600 questions, which include 130 covering Regulation knowledge. The rest covers Theory requirements. If a student gains a high pass rate he or she can qualify for a "full" call. If a somewhat lower pass is achieved that sets them up for a Novice licence. A morse code test is also required but that may well disappear in the near future.

I have been involved in question formulation and theory classes for several years. Here in Australia the question bank is not generally available to the amateur body. Not only do the students in New Zealand know exactly what is required of them, but also the people helping to train them know the exact scope that their lessons or tutoring should cover. This approach has many things in its favour. It means that one exam covers both regulations and theory for both Novice and Full Call aspirants. In the near future it may be the only exam required.

Overall it could mean cheaper access to our community, because there would be only one exam fee to be paid and clubs or others could run shorter and therefore cheaper courses. All the books available here contain a lot of material, which is not examinable, and do not include many items that are covered in our question banks. I find the two books by Graeme Scott VK2KE by far the best available. Many of the courses available here are far too long. If the nomenclature in the NZ Regulations bank was amended to fit local conditions we could use the whole Question Bank here. If a similar system to this ever becomes a possibility here in Australia I would be delighted to give time and energy to help bring it about. I have heard that the USA has a similar system and that their membership is growing.

What should be in exams?

One of the most important reasons for having Amateur Radio is for people to communicate with one another. My main reason for being an Amateur Radio operator is to enable me to help more people to qualify for the theory requirements. Quite a few of the people who come into this service want to be able to use the radio mainly as a means of developing new friends here and around the world.

They don't need the equivalent of a university degree course foisted on them. If they have a basic understanding of: -

(a) how a radio receiver works
(b) how a transmitter works and
(c) how antennas work

They are well on the way to their necessary level of understanding. Add to that a thorough understanding of how interference to other services can be caused and eliminated (or at least reduced to an acceptable level) and they are nearly there.

I see no reason to extend the requirements to include more about current technological developments. If operators have an understanding of the matters referred to above and desire to investigate other methods of communication other than voice or morse they can probably learn more about that from the information booklets accompanying the new equipment than we can ever afford to concern ourselves with teaching them.

This is the way things have been going up to now in most cases. We basically need to get them on air saying "Hello" to each other and the rest is relatively unimportant. The ACA at present requires a pass in a Regulations exam. It may be more legally binding for them to accept a signature on a form which states something like " I have read and understood the Regulations concerning Amateur Radio and agree to abide by them". The Morse exam looks like becoming a thing of the past in the near future. I look forward to the time when the path towards an Amateur licence is much more simplified, just as it is in New Zealand.

Who do we recruit ?

A lot of talk about getting new members for the Amateur fraternity centres around getting young people to join. We may be putting too much emphasis on this age group. They have computer games and the Internet to interest them. They may not have too much spare money to invest in somewhat expensive courses and exams to say nothing of buying often costly equipment.

Let's retain an interest in them by all means but there is another group of people who merit closer scrutiny. Many people in their 50's are retiring earlier than was common a few years ago and are often looking for a new interest. Some have had a desire to become radio amateurs for a long time, but circumstances and their jobs have kept them from doing anything about it. I have three in a class of five who are more or less in this category. Their interest and ability to apply themselves is exceptional. We overlook them at our peril.

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Internet Repeater Linking

Peter Parker's article on Repeater Linking using the Internet was very welcome but disappointingly contains a few inaccuracies and some omissions. No mention was made of the pioneering work done in VK6; in fact the first repeater to be linked LEGALLY in Australia was VK6RTH in Perth. I know because it was I who obtained permission from the ACA to do it!

I like to think (says he modestly) that I also encouraged our VK2 colleagues to legally link some of their repeaters. IRLP is a great system but it bothers me that in order to make it attractive some find it necessary to make adverse and inaccurate judgements about Iphone.

Much is made of the computer operating system used. A side issue in my view, I used Windows 98 in my system with very few crashes and of course Iphone could operate under Linux if preferred.

A stated advantage of IRLP is that you can't get in through a computer, in my view (living in the Sinai in Egypt) that is a decided DISADVANTAGE. What about the amateurs that find themselves without HF or VHF facilities in nursing homes or hospitals, as well as people like me working away from VK?

With Iphone I have been able from Egypt to check into the WA Repeater Group Net just as I would from Perth. Much is made of non-amateurs getting to air via Iphone, In all the time I was linking I have never heard a non-amateur access an Australian repeater via the net. Safeguards were in place. On HF how do we know if the operator the other is licensed and what about the gateways and all that CB QRM that is broadcast on our repeaters? IRLP may be more secure but it's harder for amateurs to access too! I know this may appeal to the more puritanical of our brethren.

A typical Iphone link up often used eight or more radios, to say that IRLP is better from that point of view is wrong too.

For all that, using the Internet to link repeaters is a great idea, it is cheap and very effective, a great resource for amateurs as communicators to utilise. How else could I speak to an amateur in the UK using his handheld on his local repeater whilst fishing on some English riverbank or a US amateur driving down the freeway in LA?

Alan Taylor VK6BN
Sinai, Egypt

Internet not part of Amateur Radio

I wish to take issue with David Pilley and any others that claim that the use of Internet linking is part of the evolution of Amateur Radio. It is NOT. It is the coupling of Amateur Radio to commercial communications systems, for the use of which a charge is made. This takes the operation outside the realm of Amateur Radio and into some kind of hybrid system.

Had they wanted to adopt the same kind of convoluted thinking, Amateur Radio operators could many years ago have made a similar kind of connection. However, they saw Amateur Radio as self-sustaining, running independently of commercial interests, and prevailing in situations in which commercial systems, despite their massive financial backing, frequently failed. The great appeal of Amateur Radio lay in showing what could be achieved with low-cost and often home-built equipment. Amateurs knew that their stations could never attain the sophistication of the multi-million dollar commercial enterprises, but they proved that they could maintain viable and useful communications under all kinds of difficult or adverse conditions.

What the technocrats of today are trying to sell us is the guaranteed operation and certain performance of a world-wide commercial network, to which Amateur Radio stations can connect as extremely peripheral appendages. The network can be used just as well without the involvement of Amateur Radio at all! While some artificial restrictions have been placed, by regulatory requirements, on indiscriminate connection to these systems, there is no technical reason why anybody could not use them.

If more and more Amateur Radio operators resort to the use of this linking, the skills and independence, which we have developed in the past, will gradually be lost. With that the fascination with extending our frontiers which has held the interest of generations of communicators for the best part of 100 years. I do not speak as an opponent of computers. I hold a diploma in Information Technology, and make considerable use of the Internet. But let us leave our repeaters, which are the main target of Internet linking, to the use for which they were designed - the enhancement of mobile and local communications.

Stan Ellis, VK2DDL

Cardiac Pacemakers and Amateur Radio

My wife has just recently had a cardiac pacemaker implanted, and in the list of dos and don'ts there is very little reference to Amateur Radio frequencies and operation as being of any risk to the successful functions of these devices. ACA have been very supportive in my enquires to them concerning this matter, and have sent on a comprehensive report on EMR and public health. This deals mainly with digital telephones and cell antenna installations, but still no definite mention of Amateur Radio frequencies other than to make sure that one's amateur radio station and antenna system falls within the compliance requirements of the EMR regulations being introduced in the near future. There has also been discussion on risks associated with close proximity to mobile antenna systems on HF VHF and UHF and also with hand held units and relationship of the antennae to areas of the head, but none of these situations apply at this QTH.

I wonder just how many amateur operators would be in this situation, that of being personally involved with cardiac pacemakers either on their own person or with close members of the family. I would like Amateurs who are familiar with the situation and who have particular knowledge and other information especially with regard to the safety of all concerned to contact me. I would be pleased to hear further from anyone on this matter, and my QTH is as per current call book, and Email address is vk4bf@telstra.easymail.com.au

Ron Tulloch VK4BF

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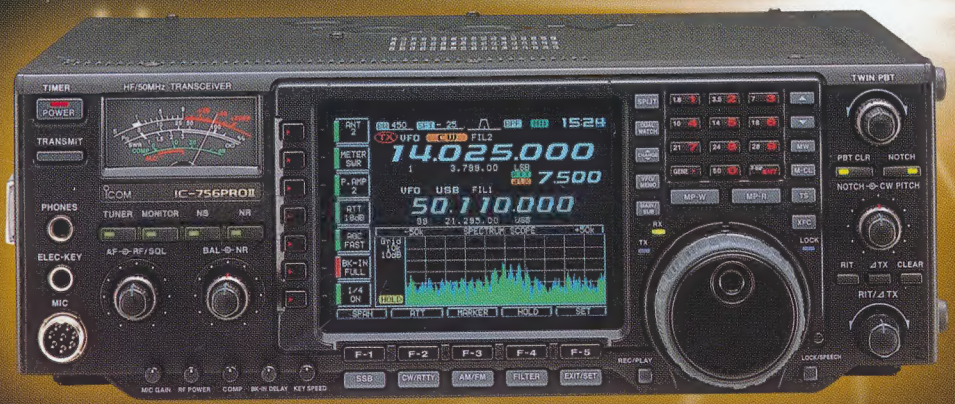

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